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Vol. CLXVII No. 2181 WITH WHICH IS INCORPORATED THE GRAPHIC NOVEMBER 8 1941

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Volume CLXVII No. 2181

The SPHERE, London, November 8, 1941

THE SPHERE

With which is incorporated "THE GRAPHIC"

The Empire's Illustrated Weekly

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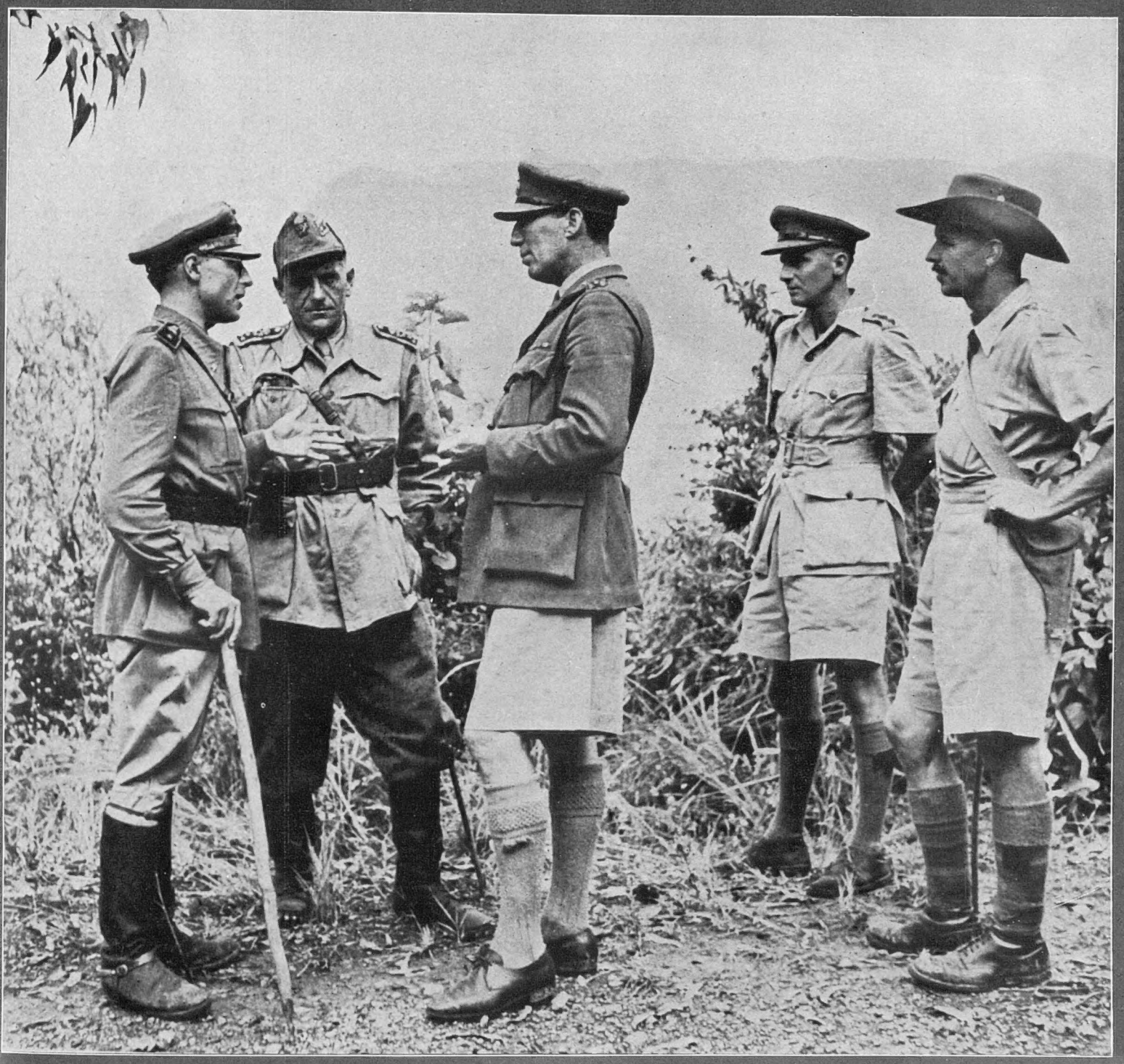

THE SURRENDER OF THE ITALIANS AT WALCHEFIT PASS IN ABYSSINIA—SEPTEMBER 28, 1941

During the subsidiary, mopping-up operations in Abyssinia after the final surrender of the Duke of Aosta with the main Italian armies at Amba Alagi, certain of the enemy forces were pursued towards Gondar, where the final resistance of the Italians was staged. On September 28, however, the enemy holding Walchefit Pass, 80 miles to the north of Gondar, surrendered under arms and were accorded the honours of war. Headed by the Italian flag, the enemy columns came down the pass from their fortified positions and passed before the British brigadier. The guard of honour was composed of men of the King's African Rifles, who have served with such devotion throughout the Abyssinian campaign. A mile from the saluting-base the Italians had laid down their arms. During the march-past a rainstorm swept down the pass. The picture above shows Colonel Gonella, who headed the surrendering Italian force, talking with the Commander of the British Infantry Brigade to whom he surrendered (third from left)

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A WAR NEWSLETTER—No. 114

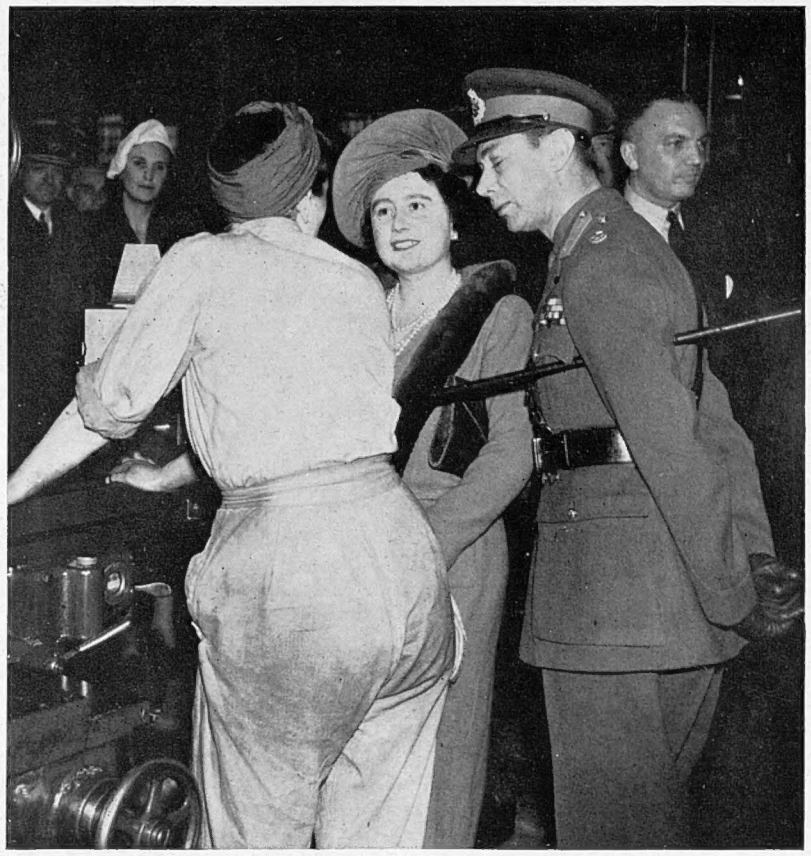
1, NEW OXFORD STREET, W.C.1.

Criticism from Armchairs.

—I have not yet fallen to criticise strategy or propound strategic plans from my armchair. I confess that I regard the armchair and amateur strategist as little better than a half-wit. Not, I think, because he cannot comprehend the range of possibilities so well as a trained military chief, nor entirely because he has not all the vital facts at his command, as has a member of the War Cabinet. War Cabinets, knowing the known facts, have made or approved hideous, unbelievable blunders in strategy, and some of our greatest generals have blown the gaff on the complicity of the problems of strategy. There are not a hundred devices from which to choose. There is often a choice of but two or three, all well-worn maxims, of which the right retention and final use of your *reserves* is ever the chief. I fancy many armchair amateurs with brains, if they had all the available facts known, might hit off the right strategy as successfully as the general in command. Their folly lies in rushing in where angels fear to tread. They risk the certainty that, however shrewd their plan, the dice will be loaded against them. The plan they propound *they* themselves can never execute, and in my belief success in battle owes less to the strategic plan than to its execution under the ordeal of battle. These handicaps face also critics of strategy and all amateurs who set up to be students of war. It is execution, not conception, that does the business. It is the executant, not the theorist, to whom in wartime men will lend an ear. So much for armchair critics of strategy. When it comes to more general criticism of a war Government, I feel open-minded. I cannot dismiss from my mind that politicians have two distinct views of public criticism. When they are private members or in opposition, they nail their colours to the mast and loudly affirm that Democracy is dead the moment the public's right to criticise its Government is stifled. When they are in office, however, the critic becomes a nuisance, a danger, an unpatriotic citizen; at the best, an armchair critic. They cannot have it both ways. Some of our present Ministers have been chief protagonists for the public's right to criticise and to extract the truth. And there are worse places than armchairs from which to do a little criticising, born of a spell of calm, constructive thinking. In war especially, your talented amateur may have more time for thinking than your executant in office. It needs a lot of quiet thinking to win a war. Nearly all in the past have been won by the side which made fewest egregious blunders.

"Bellum Cum Dignitate."

—There is another viewpoint to every picture; a contrary view to every opinion; and usually they are worth study. There has been much girding of late at people in Britain playing at war in Russia's hour of crisis and still remaining pre-Munich-minded in the third year of war. Such girding and condemnation are inevitable and proper, and indeed should be followed up by actions and not confined to speeches. But let us for a moment sift the good from the bad, the mineral from the shale, in this sweeping condemnation. Let us remember in justice Drake's game of bowls as well as Drake's Drum. When we compare Britain with Russia to-day (always to Britain's disadvantage), let us remember what Beaverbrook and Bartlett told us of the rich banquets and endless toasts, the red carpets and splendours, of the Kremlin under the bombs of the Nazis and in sound of enemy guns. Let us set that off against the picture of our House of Commons spending a full day in debating the claims to exemption of a dozen Group evangelists. Serious articles in British sporting journals are still being written about Edwardian crack shots; about golf and football; and it is reasonable to expect that, if Hitler's Gauleiter had actually arrived in London, the *Daily Telegraph* would still publish its daily feature recording the birthdays of obscure younger sons of obscure peers. Is "all that" totally wrong? Let us be just and balanced. *Bellum cum dignitate* is harder to achieve than *otium cum dignitate*, and the achievement is much more valuable. If we can keep our balance, our proportion, our dignity, in the present stress of war, we do something our enemies cannot do, something which profoundly affects their morale and shakes what remaining confidence they have in Hitler and their cause. If we do that, let us not inquire too closely into the forms which that fine, national determination not to be *rattled* may take, even if some of those forms do not accord with the new social "order" which this war and the peace are to assure to us. In Britain we are slow to change as we are slow to anger. We have increased the pace of late both in evolution and in anger, and the most deadly anger is the cool, unhurried anger, even as the most effective and permanent evolution is the slow, deliberate kind and not the swift, revolutionary *volte-face*. Let every man who can be found a war job be given a war job suited to his capabilities. The remainder can be much less usefully employed than in writing about covert-shoots and golf or recording the approaching birthday of the Honble. Hubert Piffle. They are at least keeping our traditions from rusting, keeping us sane and balanced, and putting the brake on that zealot's Gadarene rush which is the evolution of destruction.



A ROYAL VISIT TO MINISTRY OF SUPPLY FACTORIES: Last week the King and Queen made a tour of four great factories in the north of England. At a Royal Ordnance factory they saw Britain's new secret anti-tank gun being made. Their Majesties learned that over 90 per cent. of the workers making guns are women, who show remarkable aptitude for the work, often learning to operate complicated machinery in a matter of three weeks. The King and Queen are seen talking to one of the workers during their tour

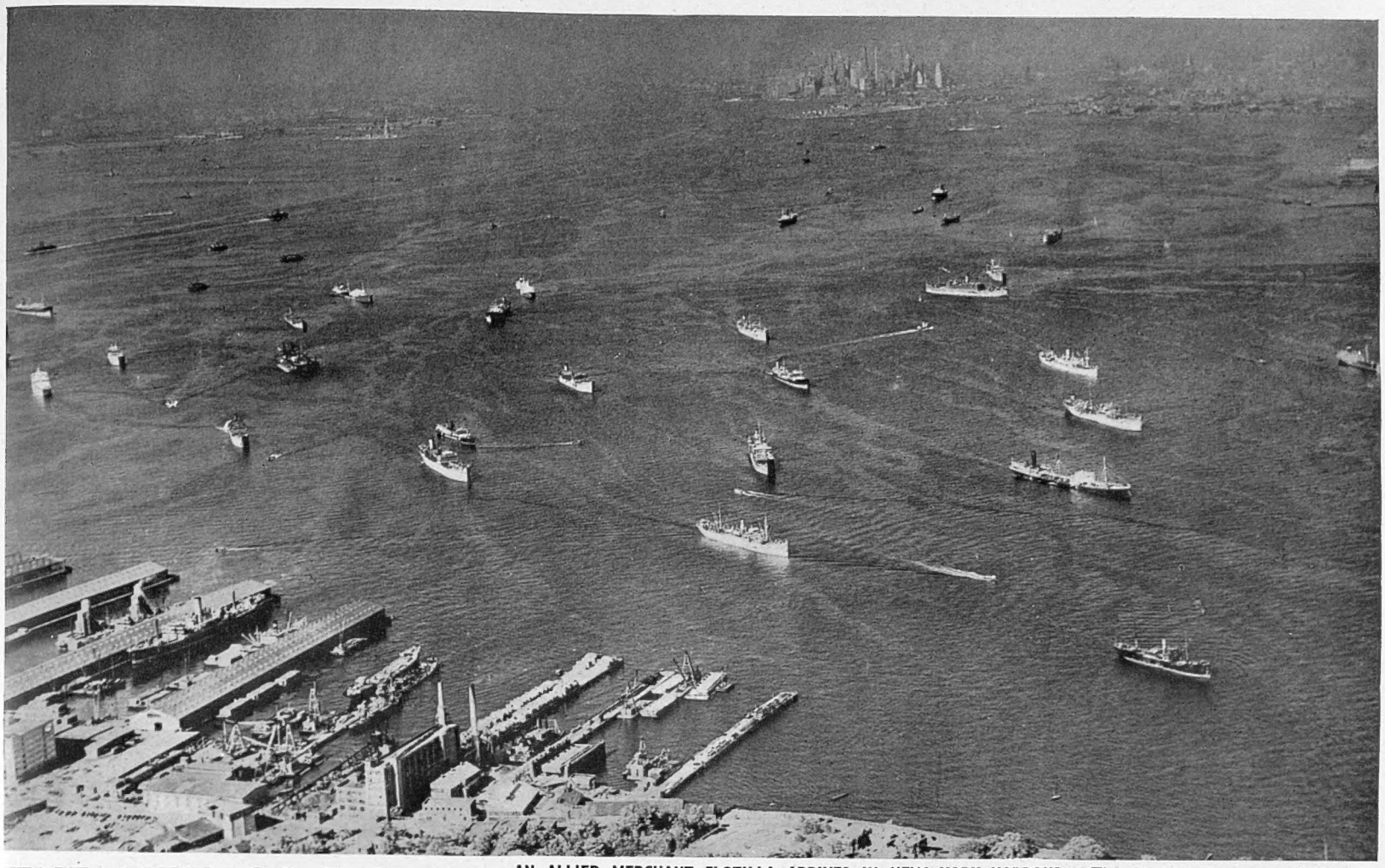
While God Goes Marching On.

—The abuse showered on Mr. Roosevelt by the Berlin Press by Goebbels' mudslingers is not a subject worth comment, beyond the generality that it is the essence of gaminism. But that mudslinging does possess a scintilla of logic when it stresses the vanity of words, phrases and formulas for any purposes in war save of deception or camouflage. No doubt, every pronouncement by Mr. Roosevelt goes a little nearer to the crater edge, and on that account is hailed by a majority of Americans as a welcome advance. But on cool reflection the world asks why, if a majority of a free democracy now welcomes any advance to the crater's edge of total war, there is any need of words and still more formulas. Is it enough to reply that the constitution of the U.S. is the most intricate and elaborate conception of any state of civilisation, and that nothing but manœuvre of the most adroit kind can achieve the majority's will; and then only after years of effort? Or is it enough to say that alone of the nations of Civilisation the American has both the culture and the political and geographical conditions to enable it still to keep at least its Achilles-heel out of the filth and slime and beastliness of madness which is modern war? Who are we, who a year ago cast many a longing, lingering look back to the dawn of the century when we, too, were in splendid isolation and bound by no treaty to go to the aid of this European Power (whose language we never understood) or that Balkan State (whose politics were purely parochial, and whose ambitions were narrow and entirely national and acquisitive)? But to-day the issue is immensely simplified. We are back to first things. It is the primæval struggle of darkness against light, of Christianity against paganism. In the era of the Crusades there were no hangers-back among those who opposed paganism. There were no Crusaders who sent swords in lieu of men. They came with their swords, and used them. When you are back to first things, what is human life worth? If it is not worth preserving for slavery, it is worth risking for freedom. There is no answer to that, and a waiting world begins to ask if in this supreme crisis time can be spared for formulas, if freedom can still be purchased for less than the top price of the supreme sacrifice, and if the possibility of continued immunity from the filth and agony and terror of war is not too expensively bought at the price of humiliation, or, at the best, lasting regret hereafter. The proud war hymn of America contains no nice formulæ, no delphic phrases. It is sung in America in words which offer no alternative meanings. It does not say: Let us work, let us give, let us lend, let us encourage others, help others or maintain others, to make men free. It says simply: Let us *die* to make men free. (And God and Time, too, go marching on.) Brother, we fought at Arques and you were not there?

Man-power: Town and Country.

—I believe (after two years' experience) that one of the vital obstacles in the way of our reaching a 100 per cent. war effort is the apparent fact that the organisation and direction from the top is conceived by minds which think only, or chiefly, in terms of urban areas. The diverse and peculiar conditions obtaining in rural areas are all too little appreciated and considered. In no sphere is this more true than in organisation of the Home Guard and defence services. It is permissible to wonder whether we should not have gone further and done better if the regional "dictatorships," designed for the invasion crisis, had come into operation from the start of the war in some restricted form. There are tragic instances enough and to spare. Home Guard training, for example, for nearly two years has been conceived on the basis of platoons drawn from towns, resident in towns, and having the advantages of a well-lit, well-heated training centre, easily within reach of every volunteer, and with trained regular N.C.O.s ready and willing to give evening instruction. Yet there are still scores of rural platoons, whose members live four miles from their training centre (often an ill-lit hut) and have no regular troops within reach. Here in this connection are a few points which discourage the Home Guard. **1.** *The attitude of certain farmers to the Home Guard.* No one questions the hard lot and the difficulties of the farmer; but it is only too true that many professional farmers still discourage their men from undertaking any service in the defence forces and organisation and even show authority from their own directing authorities to back up their policy. **2.** There exist to-day many "amateur" farmers, who indeed are "farmers for the duration," who maintain a cow or two and some poultry on a few acres as a war occupation (or means of escape) and bring forward their "vital, reserved occupation" as an answer to any criticism that they are taking no part in their country's defence. **3.** There are scores of young men of military age in every county who are employed in timber-felling who not only resist but scorn invitations to join the Home Guard or other defence services. Meanwhile experienced countrymen up to forty-one years of age, skilled but not permanently employed agricultural workers, or woodmen, are called daily to the Colours from the Home Guard—and from these military call-ups there is no appeal even for "key men" in that force. **4.** The urban fire-watcher receives double the pay per hours of duty which a Home Guard volunteer receives. The fire-watching organisation does not apply to rural areas, but the urban area borders on the rural, and the facts are known, and fester. **5.** The Home Guard have been supplied with many types of highly dangerous bombs, and every volunteer is now required to throw each type of live bomb, and to understand its working parts. Such practice, if it is to be effective and not highly risky, must be conducted under skilled supervision, with elaborate discipline and safety precautions, in a prepared place, and only after careful initial instruction in the composition and mechanism of each type. Yet the rural platoon commander is expected to prepare a bombing range by the light of nature and to take out his men and let them throw their bombs about. When he pleads that he is not qualified for these duties, and asks that his men should be afforded a proper course at a bombing school under trained instructors, he is met with the answer that no fund is available to compensate his men for the loss of hours of employment during their course! Of course, the official mind envisages a platoon (every platoon) drawn from a "garrison town" with handy, regular instructors and full bombing facilities attached to the town's garrison of regular troops. These are a few examples of how the urban-minded authority plays havoc in rural areas.

THE OLD STAGER

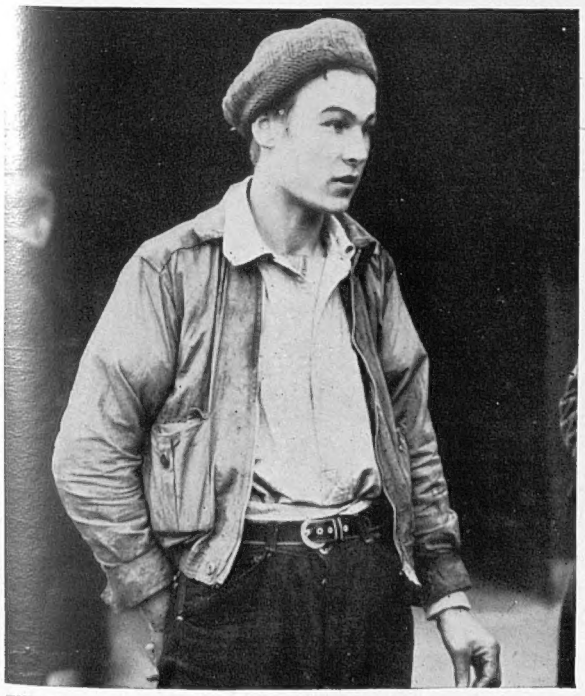


AN ALLIED MERCHANT FLOTILLA ARRIVES IN NEW YORK HARBOUR : This picture shows part of the great fleet of 114 merchant vessels which arrived recently in New York. It was made up of ships of British, Dutch, Norwegian, and other Registry, and was the greatest mercantile flotilla for years. In the foreground can be seen Staten Island Docks ; in the background, the Bay Ridge shore

THE MEN OF THE MERCHANT NAVY

URVIVORS OF A STRANDED MERCHANTMAN saved by the Cromer lifeboat crew

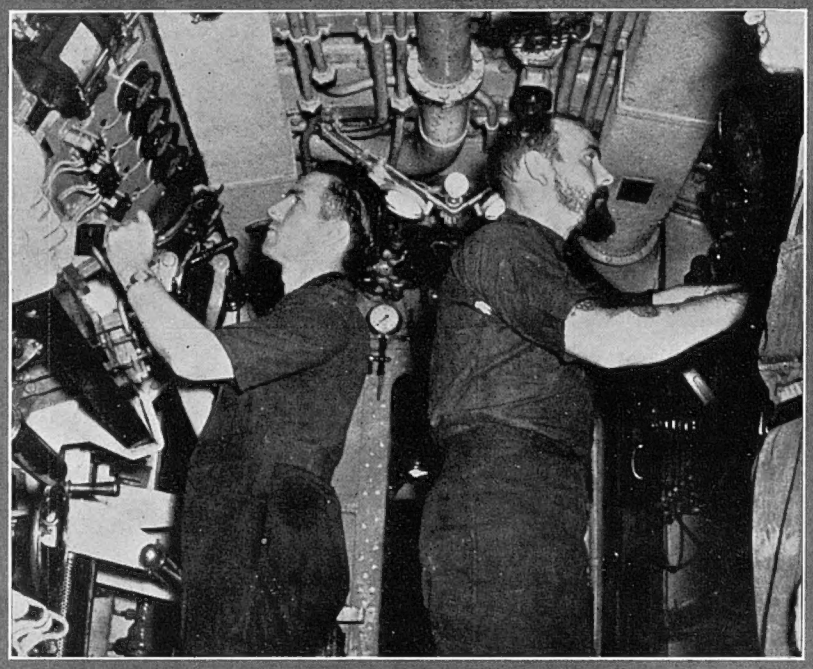
THE CROMER LIFEBOAT RESCUES FORTY-FOUR MEN FROM A STRANDED MERCHANTMAN—The waves batter at the sinking vessel as the lifeboat pulls away : After the failure of the first attempt, members of the Cromer lifeboat crew succeeded in rescuing forty-four of the crew of a merchantman stranded on a sandbank some miles out at sea. Harry Blogg, Cromer's famous lifeboat coxswain, was among the lifeboat crew ; he holds the George Cross, and has three times been awarded the "Lifeboat V.C." Walter Allen, a member of the crew, lost his life on the first attempt at rescue, when he, Blogg, and some others were washed overboard by the fierce seas. They were all pulled on board again, but Allen died from shock. Five members of the merchantman's crew were washed into the sea and drowned



THE SOLE SURVIVOR OF A CREW OF FORTY : John Harrison, of Cardiff, on his arrival at a British port after having been picked up by a Canadian destroyer. The merchantman on which he was serving was torpedoed in the Atlantic, and he was the only member of the crew of forty to be picked up. He was in the water for two hours

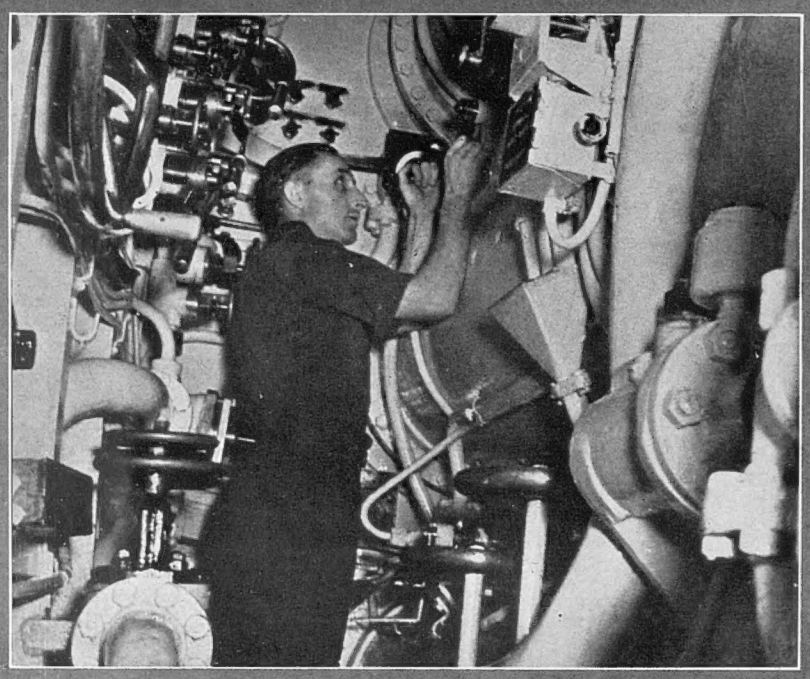
BACK TO PORT AFTER BEING TORPEDOED : These seamen reached safety after a thrilling adventure when their ship was torpedoed. In a lifeboat which capsized six times, they refused the help of one ship whilst searching for their mates. They were picked up later by a second rescue ship

ON BOARD A BRITISH SUBMARINE

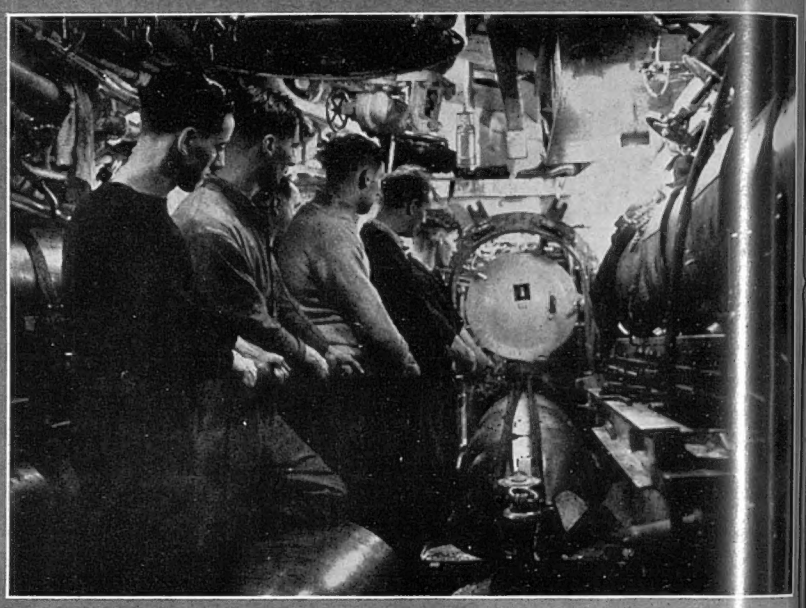


THE SUBMARINE DIVES: The two men are operating the levers whereby the hydroplanes are controlled. Their eyes are fixed on the dials above them which indicate the angle of descent

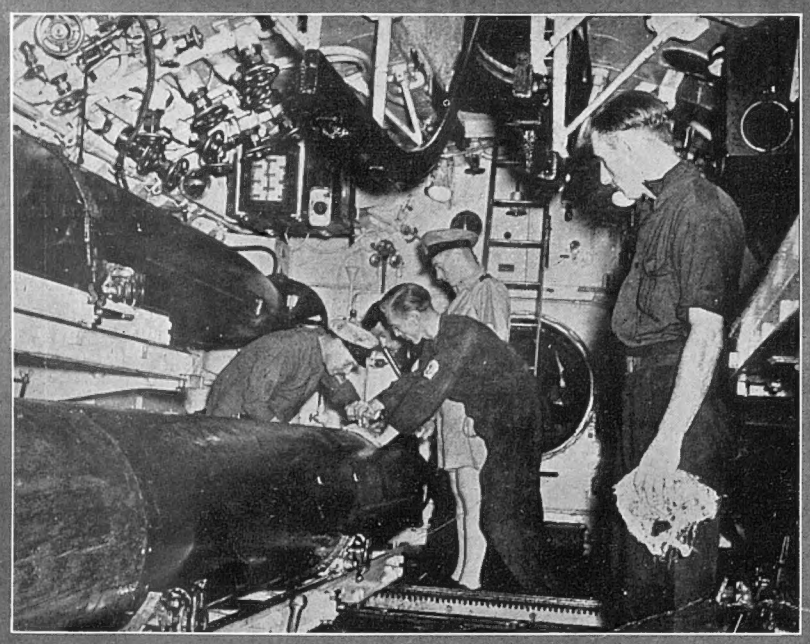
CARRYING OUT AN ATTACK WHILST SUBMERGED: The Captain is at the periscope, gripping its two handles. His junior officer and the other member of the crew are at their action stations



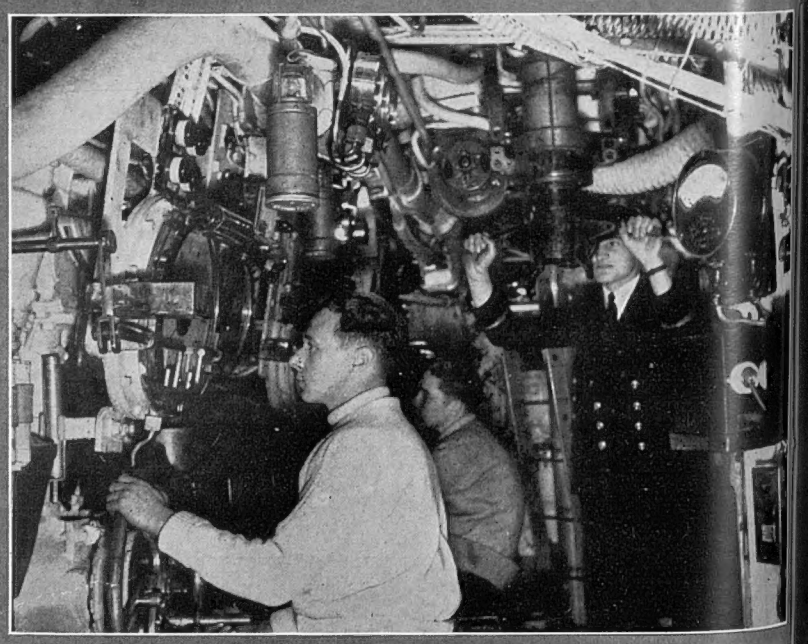
THE TORPEDO GUNNER'S MATE STANDING BY TO FIRE THE TORPEDO: His hand is gripping the torpedo pistol safety fork, by means of which the missile is launched



THE SCENE INSIDE THE TORPEDO CHAMBER: Unlike the other pictures on these pages, this and the one below were not taken during actual patrols at sea, but in a training vessel

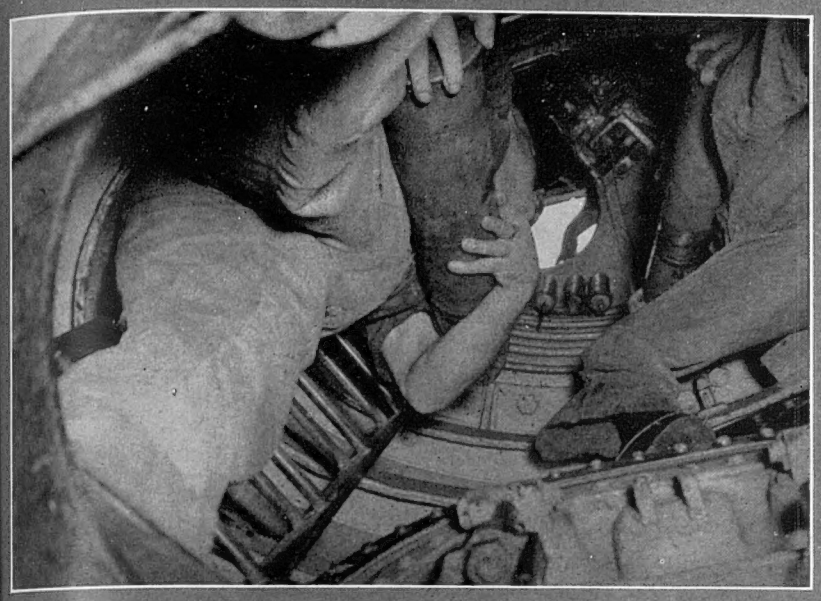


FORE-END MEN CARRYING OUT ADJUSTMENTS TO A TORPEDO: When these adjustments are made (under an officer's supervision), the torpedo will be slid into its tube for firing

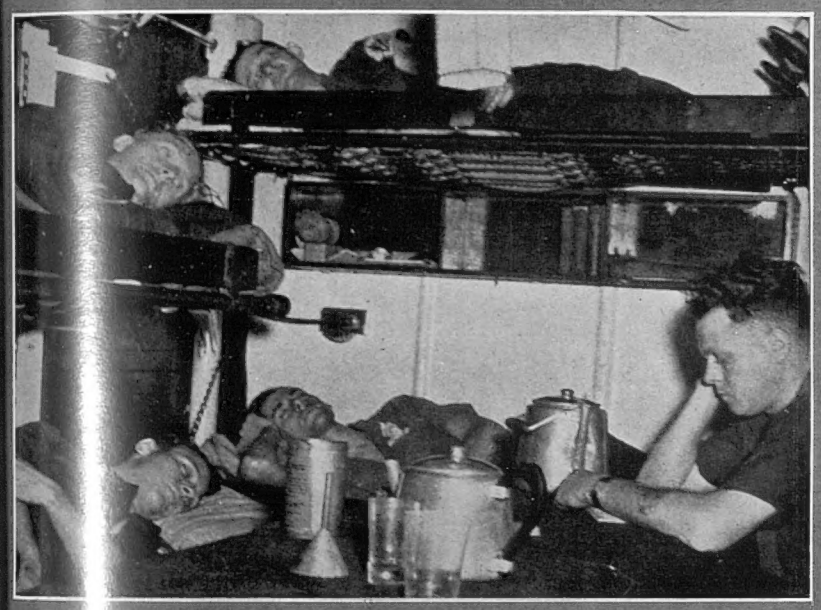


THE CONTROL ROOM: The officer is at the periscope, watching the enemy. His orders as to course, trim, etc., are being conveyed to the men at the controls who are carefully watching the dials

A New Set of Official Pictures Taken During the Course of a Patrol Showing the Life and Conditions Below the Ocean

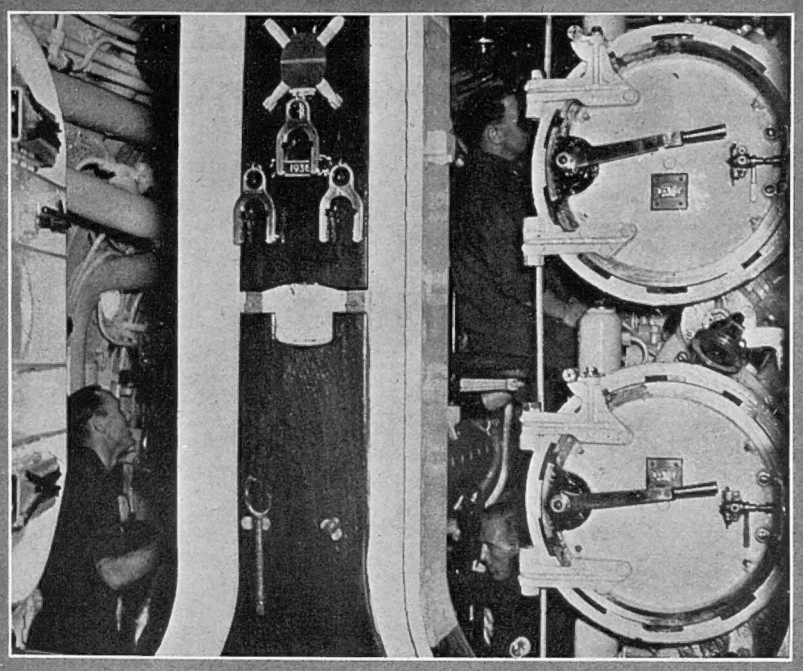


GOING TO GUN STATIONS UP THE CONNING-TOWER : The gun is on the deck, forward of the tower. It can, of course, only be operated when the submarine is on the surface



THE CHIEF AND PETTY OFFICERS' MESS AT "WATCH DIVING" : Some of the crew are asleep in their bunks, whilst others are more alert and ready to go on watch

"BIG EATS"—IN OTHER WORDS, LUNCH : During patrols this is eaten at midnight. "Breakfast" is at 8 in the evening; supper at 8 in the morning. The crew sleep during the day

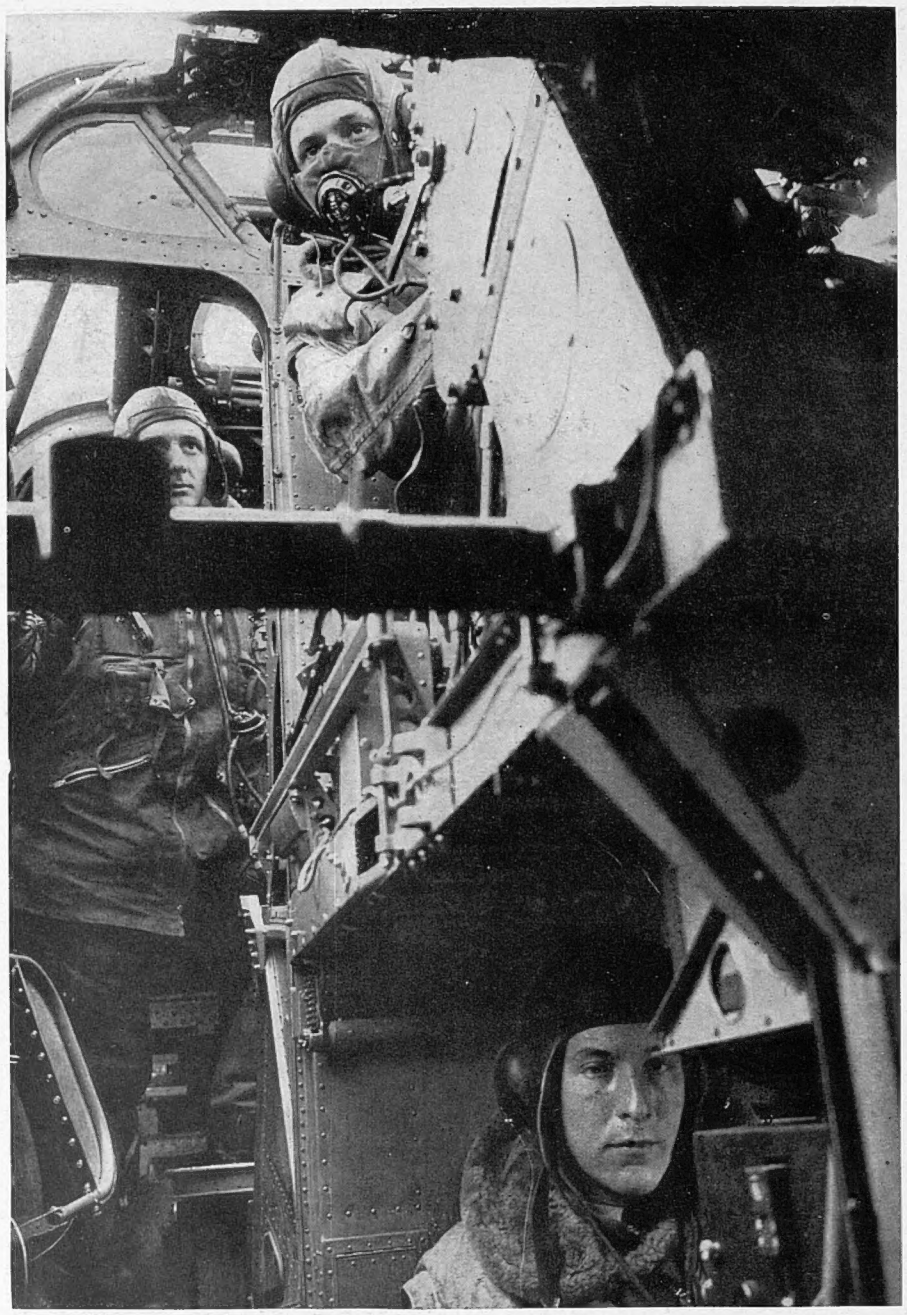


THE AIR PRESSURE CONTROLS : In this picture can be seen the torpedo pistol safety forks. These are preserved as souvenirs of torpedoes which have reached their mark—in this case an Italian submarine

ON THE SURFACE AT NIGHT : The most popular game in submarines is "Ukkers," which elsewhere is probably better known as "Ludo." The four officers of the vessel are here participating in the game

MEALTIME ABOARD A SUBMARINE : Another view of the crew at night. The bunk is swung up out of the way, and the men relax as they come together for their meal

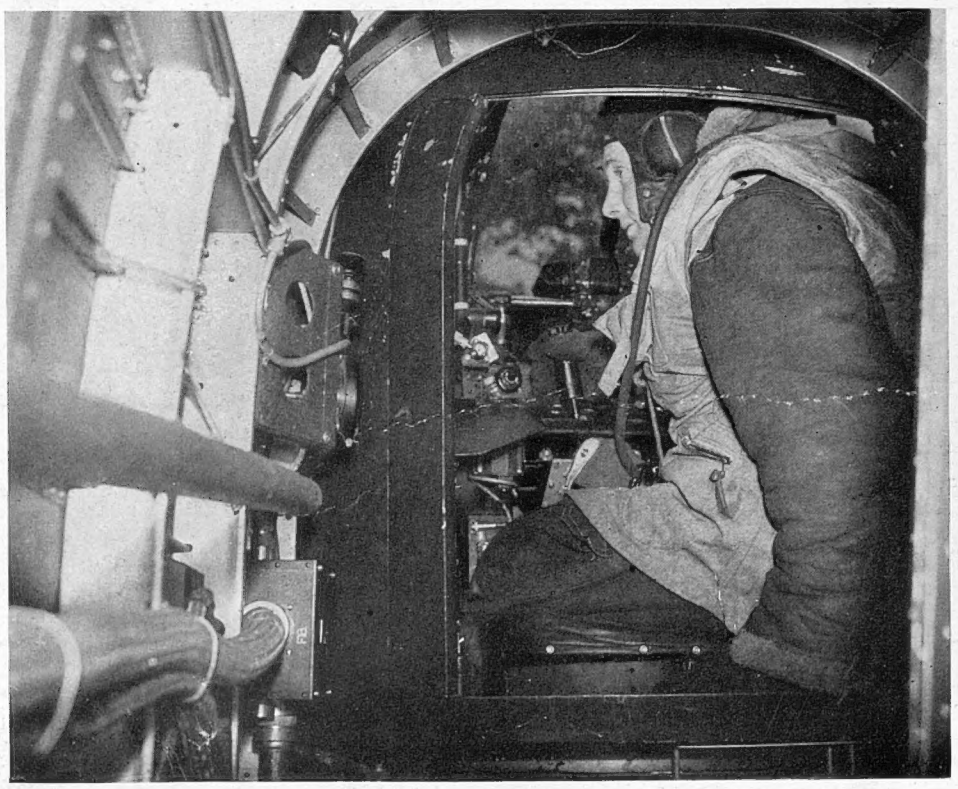
HOME LIFE IN THE BIG BOMBERS



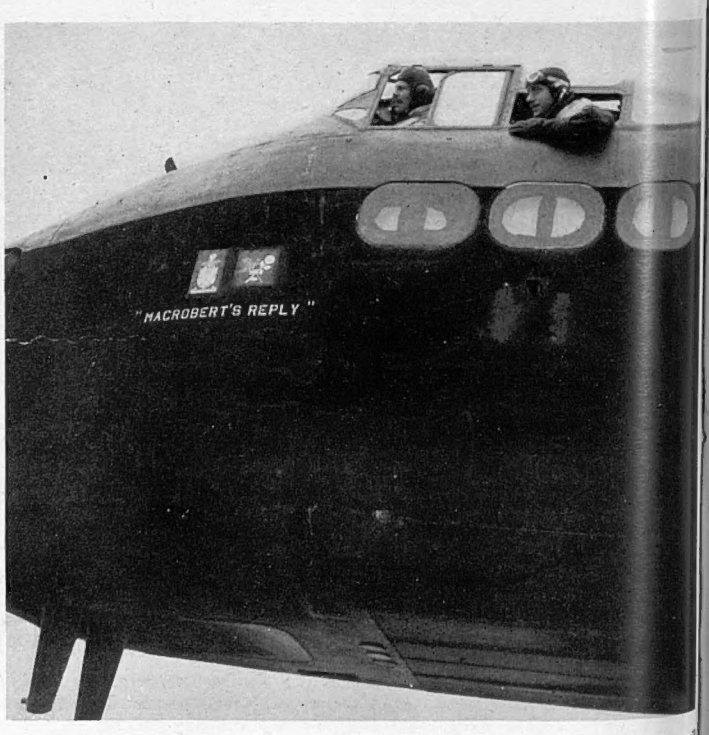
READY TO GO: HOW THE CREW ARE DISPOSED IN THE HALIFAX—The pilot is aloft, and behind him is the second pilot; down below is "Sparks," the radio operator

The firm of Handley-Page have been making big aircraft since the very earliest days of aviation. To-day they are producing one of the biggest aircraft yet operated by the R.A.F. The **HALIFAX** is a four-engined bomber (Rolls-Royce Merlins) which has a wing-span of 99 ft., a length of 70 ft., and a height of 22 ft. It is of a new type, and carries a good bomb-load: it has been equipped with a heavy defensive armament and is a match for any Nazi fighter which might dare to attack it. In operational service, the Halifax has raided targets in all parts of Germany and Northern Italy, and it has had conspicuous success in the recent raids on Berlin. It is, in fact, mainly used for long-distance bombing flights and carries fire and fury far into enemy territory. A feature of this giant bomber is the manner in which quite a tall man can walk through the aircraft perfectly upright. One of these Halifaxes has been built out of the £25,000 sent by Lady MacRobert of Aberdeenshire as a memorial to her three sons: two of them were killed whilst on service with the R.A.F., after her eldest son had been killed in 1938 as the result of a crash whilst flying his own aeroplane. The bomber has been named "*MacRobert's Reply*"

ANOTHER PICTURE OF THE HALIFAX CREW: The pilot is looking down at the radio operator; forward are the bomb-aimer-navigator and the second pilot

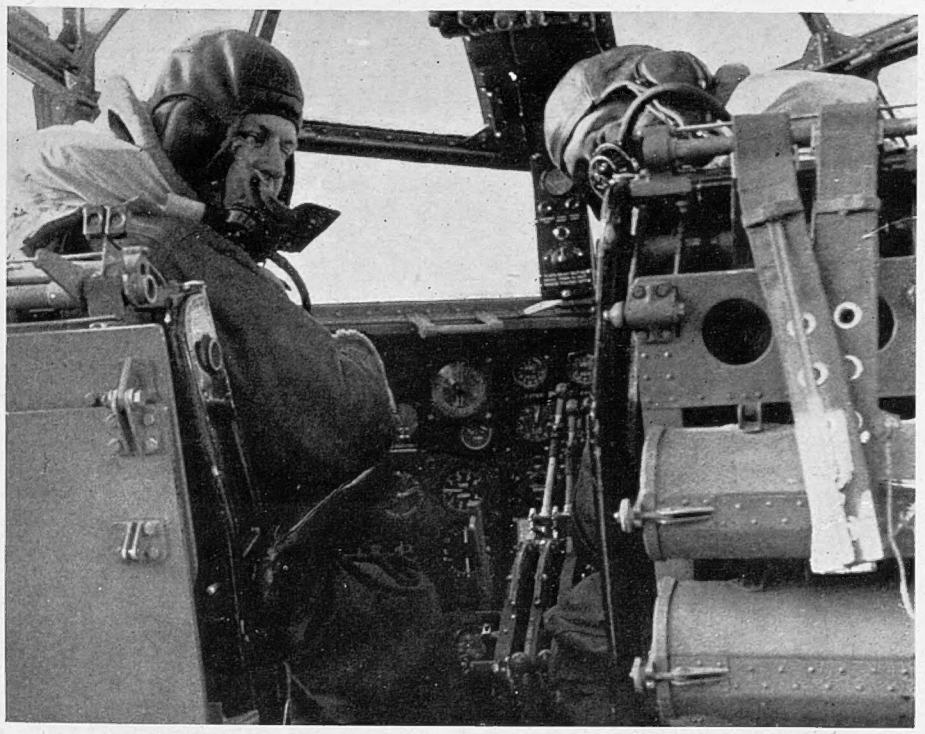


A LONELY JOB ON A LONG-DISTANCE FLIGHT: Right astern of the aircraft is the rear gunner's turret, which projects beyond the tail. This picture was taken as the rear gunner took up his position just before the start of a trip over Germany



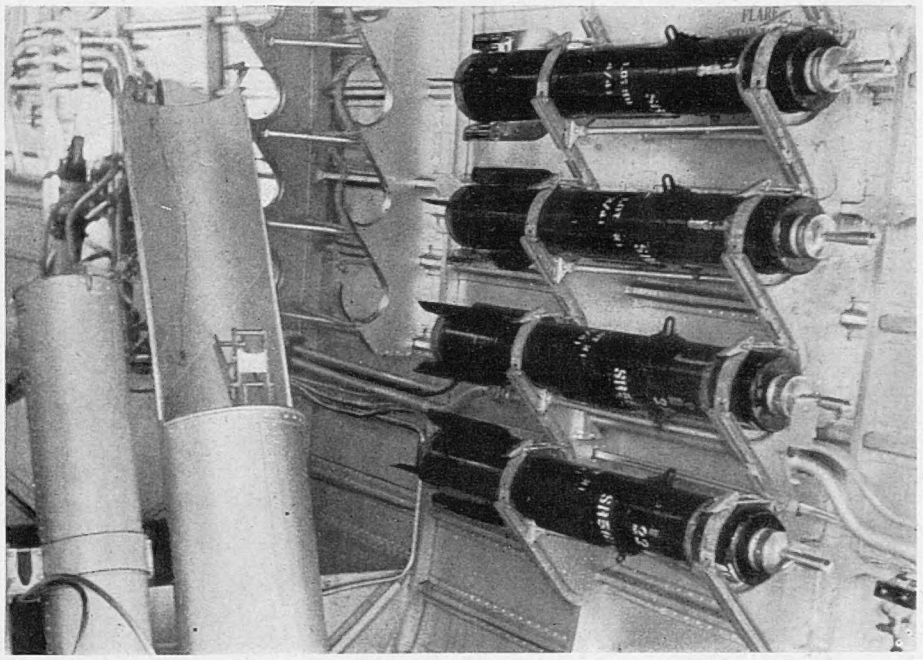
THE COLOSSAL DEPTH OF A HALIFAX: A comparison with the pilot will demonstrate the extraordinary size of the aircraft. It was paid for by a £25,000 gift from Lady MacRobert

TO PROTECT THE 5-FT.-DIAMETER TYRES OF THE STIRLING, covers are used whilst the aircraft is at rest at its dispersal point. The mid-wing arrangement means a very long undercarriage



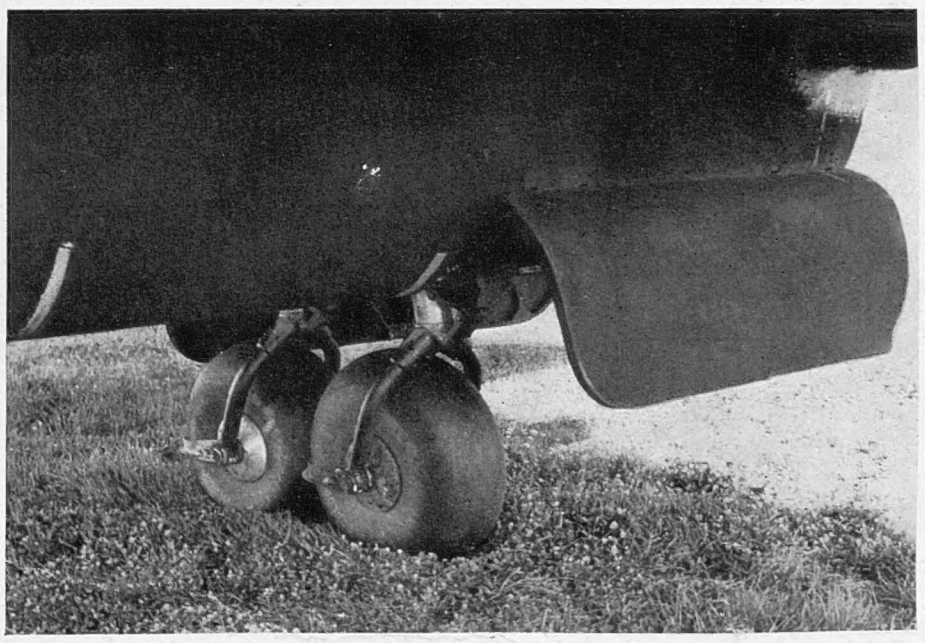
THE CAPTAIN AND SECOND PILOT AT THE CONTROLS: The "office" of the Stirling is well lighted and all the multiplicity of controls come nicely to hand

The Short Stirling bomber is being produced by the firm of Short Brothers, of Rochester, the oldest established firm of aeroplane designers in the United Kingdom. It is this firm which built the colossal Empire flying-boats and which to-day is building the Sunderlands of the Coastal Command. The **STIRLING** is the largest bomber in service in the world to-day: during the past months it has taken part in both day and night raids over enemy territory, including the long-distance flight to Italy. It has a span of 99 ft., a length of 87 ft. 3 ins., and a height of 22 ft. 9 ins.—yet it is so well proportioned that, in the air, it gives little indication of its huge size. The Stirling has four Bristol Hercules engines of 1,400 h.p. each: when retracted, the colossal undercarriage wheels still project slightly, but the twin tail wheels retract completely. The bomb-load is colossal—one Stirling can carry as much as three or four Wellingtons or nine Blenheims. Without disclosing its top speed, which must necessarily remain unpublished, it can be stated that its most economical speed is in the neighbourhood of 200 m.p.h.: recently, one was dived after an Me. 109 at a speed of 400 m.p.h.!



IN THE RECTANGULAR FUSELAGE OF THE STIRLING such things as flare-containers and flare-chutes can be comfortably spaced out

MOST IMPORTANT OF ALL! The bomb-aimer's position in the nose under the front gun turret. On the right-hand side can be seen the bomb-selector switches

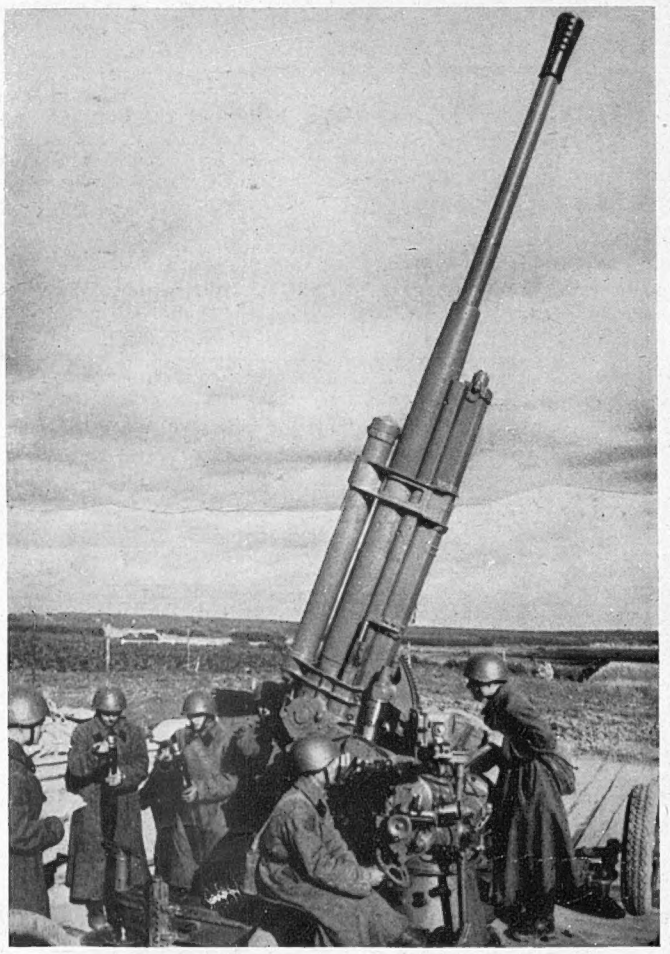


TWIN WHEELS ARE NECESSARY TO TAKE THE TAIL-LOADS OF THE STIRLING: These are completely retractable when the aircraft is in flight; but in this picture they are shown at right angles to the fuselage

THE LATEST PICTURES FROM RUSSIA

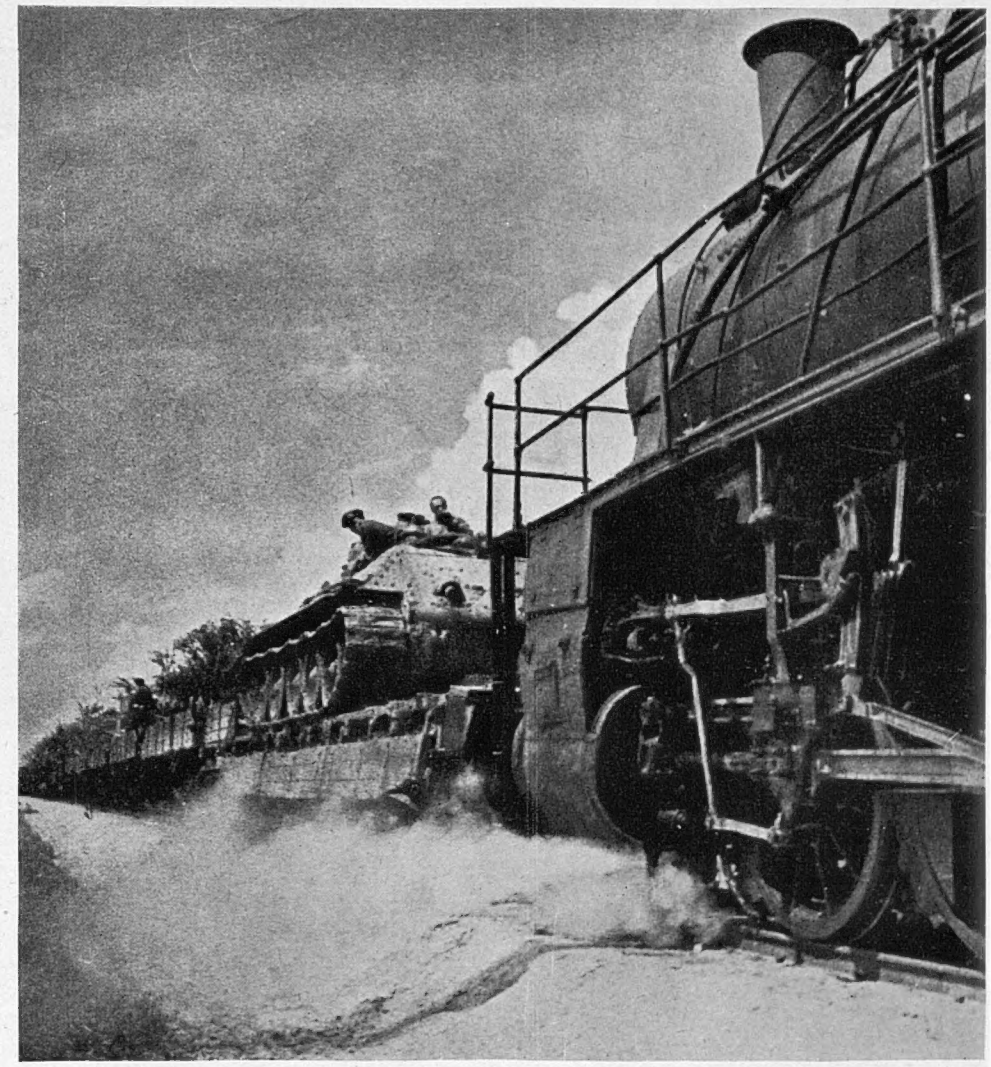
THE R.A.F. WING IN RUSSIA : A Scots pilot indulges in a Scottish pastime—Tossing the Caber (in this case a Russian fir)

WOMEN OF LENINGRAD collecting warm clothing for the men of the Red Army on the northern sector of the front



DEFENDING MOSCOW AGAINST AIR RAIDS. The gun crew of this Red Army anti-aircraft battery has helped to repel German air raids on the Russian capital : it has already shot down many "Luftwaffe" bombers

HURRICANES OF THE R.A.F. FIGHTER COMMAND WING, now operating in Russia, lined up on a flying field. The wing has its own aircraftmen to service the Hurricanes, and the repair "hangars" are mainly timber shacks



THE RUSSIANS SEND UP MORE TANKS TO THE FRONT : the heavy locomotive is pulling a long line of goods trucks, all laden with Soviet tanks bound for the front. Despite Soviet losses, there are many more tanks behind these—to say nothing of the output of British tank factories

MOSCOW QUICKLY REPAIRS AIR-RAID DAMAGE. This picture shows the reconstruction of Gorki Street in full swing. After some of the houses had been moved to new sites, the street is now being asphalted

RUSSIA'S ICE-FREE PORT IN THE FAR NORTH: Archangel, which is now reported to be free all the year round—*Drawing by E. G. Lambert*

In the article published here there is a statement to the effect that "the White Sea and the port of Archangel freeze at the end of October and are icebound for 190 days." For this reason, until quite recently, Archangel was not considered desirable as a port of entry for British and American supplies for Russia. The Russians, however, have found a method of keeping the approaches open all the year round; and it is for this reason that the United States Maritime Commission have just abandoned the Vladivostok route. It is understood that, from October 28, shipments are being sent *via* the North Atlantic from West Coast ports (principally Boston) direct to Archangel. Not only is the harbour itself kept open by ice-breakers, but also the passage by which ships approach it. From Britain to Archangel is roughly 2,000 miles: from Archangel to Moscow there is a good railway line which runs *via* Vologda. The Germans are reported to be driving towards this town, with the obvious intention of cutting the vital supply line along which much material will soon be flowing

WINTER COMES TO RUSSIA

What Conditions are Really Like from the Far North to the Caspian

By C. L. R. BRADBURY

OWING to the failure of Hitler's invasion time-table, his armies must now face the rigours of a Russian winter, and only in the extreme south can they hope to escape conditions of the utmost severity.

During the winter, excepting a small strip from the Sea of Azov, skirting the northern shores of the Black Sea and extending across the Caspian Sea, the whole territory of the Russian Empire endures an average temperature below freezing-point, and the farther north one goes the longer is the period during which the country is icebound and the rivers frozen over.

In north and western Russia winter sets in before the end of October in real earnest, and for many weeks anxious meteorological experts in Berlin have forecast winter conditions earlier than usual. Their gloomy prognostications are proving correct, for snow fell in Moscow even in September, and latest reports tell of heavy rains, mud, cold mists and winds which are already impeding progress and giving the Germans a foretaste of what yet is in store for them.

Given a normal winter—and there are signs this year that it will be exceptionally severe in Western Russia—the lot of the German soldier, 600 miles from his frontier and still denied the shelter which the buildings of the big cities would afford, is by no means enviable. Of course, in so vast a territory as that of the U.S.S.R., embracing an area of 8,500,000 square miles in Europe and Asia, one type of weather does not obtain over the whole of it. There are, in fact, three distinct types of climate in the region west of the Urals: the Atlantic type in the north-west; the mid-Continental in the central zone; and the Mediterranean type in the extreme south. In the south, therefore, winter is of comparatively short duration (from three to six months); in the Moscow region it lasts for fully six months; and farther north from six to nine months.

There are several important external factors which govern weather conditions in north-west Russia. Europe, far less in extent than Russia, must be considered as a peninsula of a great land continent, part of which extends far into the Arctic Circle. Over the huge land-mass of Central Asiatic Russia, in the region of the Gobi Desert, there is intense cold during the long winter season, and above this a vast mass of cold, heavy air collects, giving rise to a high-pressure system lasting from August to April, which becomes intensified, and extends northwards and in a westerly direction along lat. 50 deg. N. over Eastern Europe. Warm, moisture-laden winds from the Atlantic blow up against this cold air-mass and divide, deflected south along the Mediterranean and north-east along the coast of Norway. The heart of Russia, therefore, remains extremely cold, whilst the warm, south-westerly winds, blowing inland for hundreds of miles, materially influence and moderate the climate in the north and centre of European Russia. The deep penetration into Europe of the Mediterranean, the Black Sea, and the Baltic, and the warm Atlantic sea current which passes the British Isles and Scandinavia, together cause Europe to enjoy weather conditions much less cold than obtained in similar latitudes farther east. Indeed, the Gulf Stream brings more warmth to Russia in the winter than the direct rays of the sun.

Passing around the coast of Finland, the Atlantic drift reaches the Russian Arctic coastline east of the White Sea, but although the Arctic Ocean there remains open during the winter, the prevailing winds blow off-shore, and largely prevent the moderating influence of the ocean being felt for any great distance inland. The result is that, whilst the region of Murmansk reaps the full benefit of the warm Atlantic flow and the port of Murmansk, lying in a deep Arctic fiord, is open all the year round, the White Sea and the port of Archangel freeze at the end of October and are icebound for 190 days.

Even Russia's Black Sea ports are icebound during January and February, and both the Sea of Azov and the northern part of the Caspian are frozen over for short periods in winter. In the extreme north, the Gulf of Bosnia is frozen from October until May, part of the Gulf of Finland from November until the end of March, and the eastern half of the Gulf of Riga for more than four months. In the Far East, the harbour of Vladivostok is frozen from December to April.

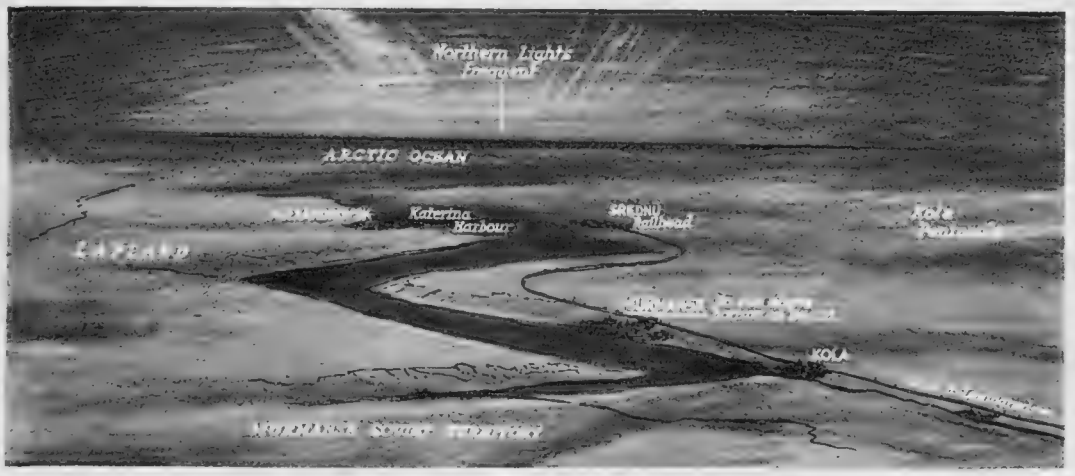
Climate being mainly a Continental type, even in European Russia, temperatures tend to extremes as between summer and winter.

Without high mountain ranges, the amount of precipitation is fairly uniform, and rainfall in European Russia is about 20 ins. There is more diversity in the south, where there is but 12 ins. in the Crimea, increasing towards the east along the Black Sea coast at the foot of the Caucasus up to 50 ins., and occasionally 60 ins. More rain falls in the summer, when prevailing cold winds come in from both east and west and meet the warmer air of the Continent, than in the winter, when the winds flow outwards. But winter precipitation is mostly in the form of snow, heavy falls of which occur from December to March, and snow lies on the ground in the Moscow and Leningrad regions for many months, rendering conditions for a large invading army not only miserable, but hazardous. The farther the Germans penetrate eastwards, the worse those conditions will become.

Their advance, rapid though it appears to have been, is yet slower than was Napoleon's in 1812, in spite of mechanisation. Launched on the same day of the year, Napoleon entered Moscow on September 14; beaten, he left it on October 19 to commence his disastrous retreat through the snows.

In the Far North, as winter deepens, the period of daylight rapidly declines. Murmansk, situated on the northern shore of the peninsula of Kola, and the northern fringe of European Russia, lie well within the Arctic Circle, where there is no sun at the winter solstice. Archangel, a short distance to the south, is but little better off for sunshine, having scarcely any daylight during December. Leningrad, at 60 deg. N., endures long winter nights, with similar periods of daylight, as may be experienced in southern Norway. But Moscow and Kazan, Kiev and Kharkov enjoy much the same amount of sun as we in England throughout the winter.

There can be nothing but cold comfort for the German High Command in a study of the climate of Russia. Their attack on Leningrad is hampered by boggy ground, following the rains of late summer and autumn, and cold weather and snowfalls have begun. The winter in the Moscow region is even longer and more severe; rain has already made the bad roads difficult, and fog abounds. Farther north conditions are worse; daylight less.



RUSSIA'S SECOND PORT IN THE FAR NORTH: Murmansk, in Kola Bay—*Drawing by Percy Home*

Murmansk lies to the very far north: it is well within the Arctic Circle, to the north-west of Archangel, and close to the Finnish border. Consequently it is in darkness during the long winter months, as the sun does not clear the horizon: the darkness is not complete, however, as the Northern Lights are frequent. Its utility to Russia is now limited owing to the proximity of the Finnish Army and to the situation around Leningrad, with which it is connected by rail

b

FARM AND VILLAGE LIFE IN RUSSIÁ TO-DAY

HOW THE RICH HARVESTS OF THE UKRAINE WERE GATHERED IN whilst air battles were actually in progress overhead—*Drawing by E. Walker*

During the earlier stages of the campaign in the Ukraine, it was essential to gather in the rich harvests before the enemy could reach them. The Soviet peasantry—on old-time farms and on Collective farms alike—set about their task with a will. By the time the Panzer divisions had caused the retreat of the Red Army there was little for the ravening hordes of invaders to loot, as most of the grain had by that time been sent into the interior. The picture reproduced here shows the conditions under which the farm workers laboured: a "dog-fight" has just developed in the air, but the enemy are too harried by the Red fighters to worry about the farm below. The farm buildings, it will be observed, are typically Russian—long and low and surrounded by wooden fencing

ONE OF THE NEW-TYPE SOVIET WOMEN AGRICULTURISTS: In Russia, the names of labouring men and women are given as much publicity as soldiers and airmen, when their achievements warrant such prominence. The woman tractor-driver above is named as Nadya Angelina, and she is employed in the Stalino district, which is now being so seriously menaced by the advancing German armies in the southern area

WOMEN HARVESTING GRAIN ON THE BUDENNY COLLECTIVE FARM IN THE STALINGRAD REGION: The introduction of the tractor, and the general Americanisation of the agricultural scene, is one of the greatest of the Soviet's agrarian triumphs. The women, especially, have taken to the new mechanical methods in wonderful fashion; and throughout the whole of Russia they are working alongside their menfolk in the fields, factories and munition centres—and under the same conditions

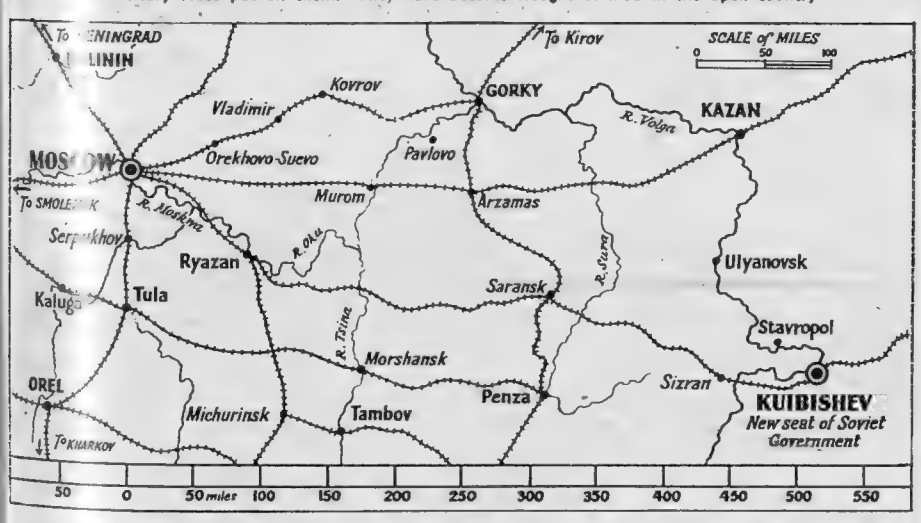
AFTER A SUCCESSFUL RUSSIAN COUNTER-ATTACK: Soviet peasants return to their village homes—*Drawing by E. Walker*

Love of one's home is as much a Russian characteristic as it is a British. Correspondents on the Eastern front have frequently commented on the persistence of the Russian peasant in his endeavours to return to his own village and his own home as soon as circumstances permit. "I defy anyone to expel a Russian peasant from his village short of the threat of shooting," wrote one eye-witness on the central front. This picture shows how the villagers return—to camp out on the site of ruined homesteads. The washing is put up on poles just as in other European countries; and the typical Russian top-boots are also stuck up on poles to dry out. Timber and thatch are much used for farm buildings, it will be observed

THE RUSSIA OF 125 YEARS AGO : These two illustrations come from *Travels in the Russian Empire*, written by Robert Johnson and published in the year 1815. *On the left* is the main street of "Igiora, a village near St. Petersburg"; and *on the right* are peasant women of the Novgorod district in typical costume. Compare these two old aquatints with the drawing below, and it will be seen how the same type of wooden village building survives in Russia to-day. The roofs of these houses continue outwards to form a sort of verandah fronting on the village street

A TYPICAL OLD-TIME RUSSIAN VILLAGE, with German tanks passing through on their way to the front in the rain—*Drawing by Percy Home*

The enemy are passing through a typical timber-built village of Western Russia: each house has a wooden shelter or portico fronting on the main street, and is of a type which has endured for hundreds of years. The type is also illustrated in the two old prints reproduced above. The weather has been impeding the Germans greatly during the past weeks: the few metalled roads have not been able to take the amount of motorised traffic the various assaults have entailed, and the lesser roads have proved quite unequal to sustaining the heavy loads put on them. They have become sloughs of mud in the open country



THE NEW RUSSIAN CAPITAL AT KUIBISHEV, showing its relation to Moscow

Lying some hundreds of miles to the south-east of Moscow is the "secondary capital" of Russia—Kuibishev—to which many of the Government departments and all the Foreign Embassies have now repaired. It lies on the Volga, and was formerly known as Samara. A good railway system connects Kuibishev with Moscow and with other parts of the Soviet. In the event of the abandonment of Moscow, the Germans would have to traverse hundreds of miles of hostile territory before they ever reached the neighbourhood of the new administrative centre. The drawing *on the right* shows the fighting front as it existed a few days ago, from Rostov to Leningrad. Correspondents in Russia—envisaging the possibility of the eventual abandonment of Moscow—have of late been speculating on the creation of a new defensive line based on Kuibishev and the Volga. Such a line would roughly occupy the position outlined here. New armies, now in process of organisation, would hold the vital Caucasus oil-bearing region and the port of Batum; and the main Russian armies would then stretch from Astrakhan on the Caspian to Kuibishev and Kazan, with the line continuing on towards Leningrad and Lake Ladoga. Supplies from the Persian Gulf could thus enter Russia from the south; whilst the port of Archangel would be the point of entry for supplies from the north

TYPICAL RUSSIAN PEASANT WOMEN—"Collective farmers"—learning to drive tractors in order to replace men drivers who have gone to the front

THE VOLGA DEFENCE LINE: The possible position of the new Russian armies, if Moscow has to be abandoned. The line would stretch from the Caspian, along the Volga river, right up to the north

THE GORT "LESSONS" APPLIED TO INVASION

How Prepared are the Army and the Civilian Population of These Islands for a Big-Scale Invasion on Totalitarian, "All-in" Scale? A Review of the Whole Position in the Light of Lord Gort's Despatches Telling of the Experiences of the B.E.F. in Flanders

By FERDINAND TUOHY

EXTRACT from an unbroadcast address on Invasion: "Hitler has two choices in this matter. He can try the invasion of Britain, in which event the probability is he would attempt to barge his way across from the Pas-de-Calais, using as battering-ram a weight of men, munitions and equipment never before dreamt of in so small a compass. Or, secondly, he may elect to turn his back spectacularly on these islands and go about developing his conquered continent, hoping by so doing to show Britain up as incapable of rescuing Europe, and to wear or soften the British themselves into a negotiated peace.

"Should invasion prove to be the choice, one of the invaded country's best means of defending itself might lie in invading the invader and in attacking his invasion lay-out. Meanwhile . . ."

Meanwhile, there are certain points raised in Lord Gort's now historic Despatches which might advantageously be reconsidered in application to possible conditions and happenings in this country, were it invaded. That the period of mental hibernation is now upon us is an incentive to proceed. The abiding impression left by the Gort Despatches is of an almighty confusion; of great numbers of the armed forces and of civilians caught in narrow spaces and whirled this way and that. The scene was low, level country extensively industrialised, such as is reproduced in many parts of England.

Apart from its being pushed from pillar to post, confusion came to the B.E.F. from the state road traffic got into, and from a breakdown of signal communications between staffs continuously on the move. The "vital importance of traffic control" is emphasised. In Flanders masses of retreating French troops and civilian refugees clogged roads which would not have been too many for the hard-pressed B.E.F. alone.

How do we stand for traffic control? It may be all on paper, but would it work in a show-down? Instructions to civilians are to go about their jobs as long as they can; then to stay put and to defend if they feel that way; and to keep off the roads. A corps of military traffic police has grown out of Flanders, but the public has no cognisance of it. Another M.O.I. film "short" seems to stick out a yard here.

Lord Gort had a specially-trained group of liaison officers ready to dash hither and thither on motor-cycles, and he pays tribute to what they did. Nevertheless, inter-communication within the B.E.F. took a severe toss and with the French and Belgians it was a wash-out. "One reason," it is stated, "was that the troops were instructed for security reasons to use wireless as sparingly as possible. It was feared that the enemy would intercept and decode messages, and that transmitting stations would be located by direction-finding apparatus and then destroyed by bombers. There is no doubt that too great regard was paid to security considerations, but that is no longer the case. When the Army is next engaged in active operations, hundreds of wireless messages will be transmitted. But most difficult technical problems have had to be overcome to provide the enormous number of frequencies required. The home radio network now extends from G.H.Q. right the way down to every infantry company. In addition, every tank has its set, and paratroops have their special equipment."

Phew! Let us hope that from being told not to use wireless except in a last extremity, the troops are not now being encouraged to use it to get shaving water; else on the day of battle an unholy muck-up could occur under Nazi ether tactics. Bear in mind what they did in Poland. They bombed the radio stations off the air, came up on the same wave-lengths, mimicked Polish announcers, gave out false news, and false instructions to Polish troops. The poor civilians neither knew what to believe nor what to do.

Next, take the B.E.F.'s struggle against Fifth Columnists and spies, a problem which assumed "almost unmanageable proportions," though "the troops soon became aware of the danger and realised the paramount need for discretion." The Germans had thousands of Fifth Columnists acting for them as they crashed forward to the Channel coast. They would have no such thing here. Yet, as a precaution, the hour the invasion bells ring, if ring they ever do, the Home Office should not hesitate to take care of a whole collection of people at present just being watched, including more than *one* peer of the Realm. A second risk concerns the position of the Allied contingents in our Order of Battle. At the start, anyhow, foreign accents might be rigorously kept from certain areas liable to invasion, so that if Germans parachuted down and pretended they were Poles or Dutch they could be summarily dealt with.

Lord Gort records that parachute troops have a nuisance value out of proportion to their numbers, and that dive-bombers, though placing a strain on morale at first, are comparatively harmless to troops that are used to them. Both of these deductions have no doubt been acted on long ere this by General Brooke. Now along comes Lord Croft to warn that Hitler will think nothing of sending cohorts of air troops against production centres like Newcastle and Birmingham. Is anything being done to give the workers at such centres a practical illustration of what they may encounter, particularly in view of Lord Beaverbrook's summons to the factories: "You must be prepared to leave the benches and the workshops and take up the weapons you have made to defend your country"?

A further snag in Flanders hinged on co-ordination, lack of. Transferred to this country, a like issue appears to involve principally the relationship between the Regular Forces and the Home Guard. Perhaps if Gort's insistence on "the vital importance of the good junior leader" were at last acted on in respect of the Home Guard, co-ordination prospects would perk up. During the winter Home Guards will be instructed in new weapons and in battlecraft on their own battle-grounds. "The kind of battlecraft praised by the authorities [one reads] is instanced by a town unit which found its way through two miles of sewers to reach a local strong point."

The B.E.F. had to go on half-rations just when terrific physical calls were being made on it, and their late Commander accordingly urges that reserve supplies and transport should be held well forward in case communications are severed or interrupted. Another finding of direct interest to the defenders of this country is that the enemy displays great skill and speed in crossing water obstacles. And have our engineers been thoroughly trained in demolition work? They 've had well over a year.

Mock exercises and alarums have produced a sense of unreality in the community at large, and a remedy needs to be found. I arrived at the tail-end of exercises in Scotland, which at that time were the most comprehensive yet. All the Civil Defence services worked with the Forces over a 1,200 square miles area: part-time and full-time A.R.P. personnel, fire-fighting services, regular police and special constabulary, medical services. The test covered twelve hours by day and night, and such "props" as sprayed aniseed "gas" and "thunder-flashes" akin to H.E. jolted the locals. But these took no part. While their "blazing" homes were tackled, while havens were found for the blasted, while gas collected, while essential communications snapped and emergency food supplies were rushed about, the civilian population looked on, grousing or grinning.

More recently mock invasions have been staged in Glamorgan and the Isle of Wight—maybe Home Defence is progressively staging shows in those twelve areas instanced by Captain Margesson as formerly known to Bismarck for getting an army into Britain. "These dozen ways, with the air roads besides, are doubtless well known to Hitler and his staff," said the War Minister, who might have added that if Bismarck regretted he didn't know *one* way of getting an army out of Britain, Hitler would never worry on that score. Every Nazi coming here would be expected to stay or die. However, this is to wander from a point of some importance. Only the Isle of Wight exercises have so far englobed civilians. Four farmers, a landowner, a labourer, a builder and a local magnate, representing eight parishes, went about their "head men" jobs following local evacuation: looking after wounded, destroying stores, redistributing food and maintaining essential services while the tide of invasion rolled forward to the roar of dive-bombers dropping bags of soot; and while the Jack Seely of yore told the invader: "The people of the Isle of Wight will never co-operate with the enemy. If this means I am to be shot, I am sorry. We shall resist you to the end."

THE MOCK INVASION STAGED RECENTLY IN THE ISLE OF WIGHT: One of the main ideas behind this recent "Exercise" was the collaboration between the Regular Forces and Civil Defence units. During the manœuvres (referred to by Mr. Tuohy in the accompanying article) men of a naval establishment co-operated with the Army in an attack on an aerodrome which had been captured by the enemy. Another incident was the capture by the invaders of a Town Hall—with the Lord Lieutenant of the County imprisoned inside. This picture was taken outside the captured building, and shows a group of the "enemy" conferring after their big *coup*

Play-acting? Rather: could this kind of rehearsing be made more common?

After more than two years of invasion standstill, would it be feasible and advisable to have a test of the general machinery piled up to meet invasion? I 'm asking a question which has been debated in rare altitudes where there were two schools of opinion. Those in favour reasoned that only by a real rehearsal could faults be drawn to the surface, duds be sifted, and fresh ideas be formed. Theory must be tested in practice. The population itself would learn enormously; would find out what it could not do and make new arrangements. It would cease to look on, as at a pantomime, and get more serious. In an invasion, all kinds of things were booked to happen of which civilians as yet knew nothing.

The "against" school rested its case under three heads. A general national exercise would (*a*) disturb the country and the workers; (*b*) reduce production; (*c*) reveal vital plans to the enemy.

Having latterly been about the country, I can't see No. 1 as very weighty. Careful preparation of the public mind could probably overcome risks or difficulties. Production would inevitably be interrupted by the transport, factory, business and general hold-up, but the question arises: should we gain more by an accretion of defence knowledge than we stood to lose by a fleeting descent in war output? As for revealing our cogs and wheels to the enemy, the chief danger would, as always, be Axis observers diplomatically immune.

The arguments of the "against" school prevailed. Maybe a solution is to be found in encouraging comprehensive local shows on the Isle of Wight model in all those regions that invite the enemy most; but it 's a pity there can't be a try-out of the many things booked to happen of which civilians still know nothing.

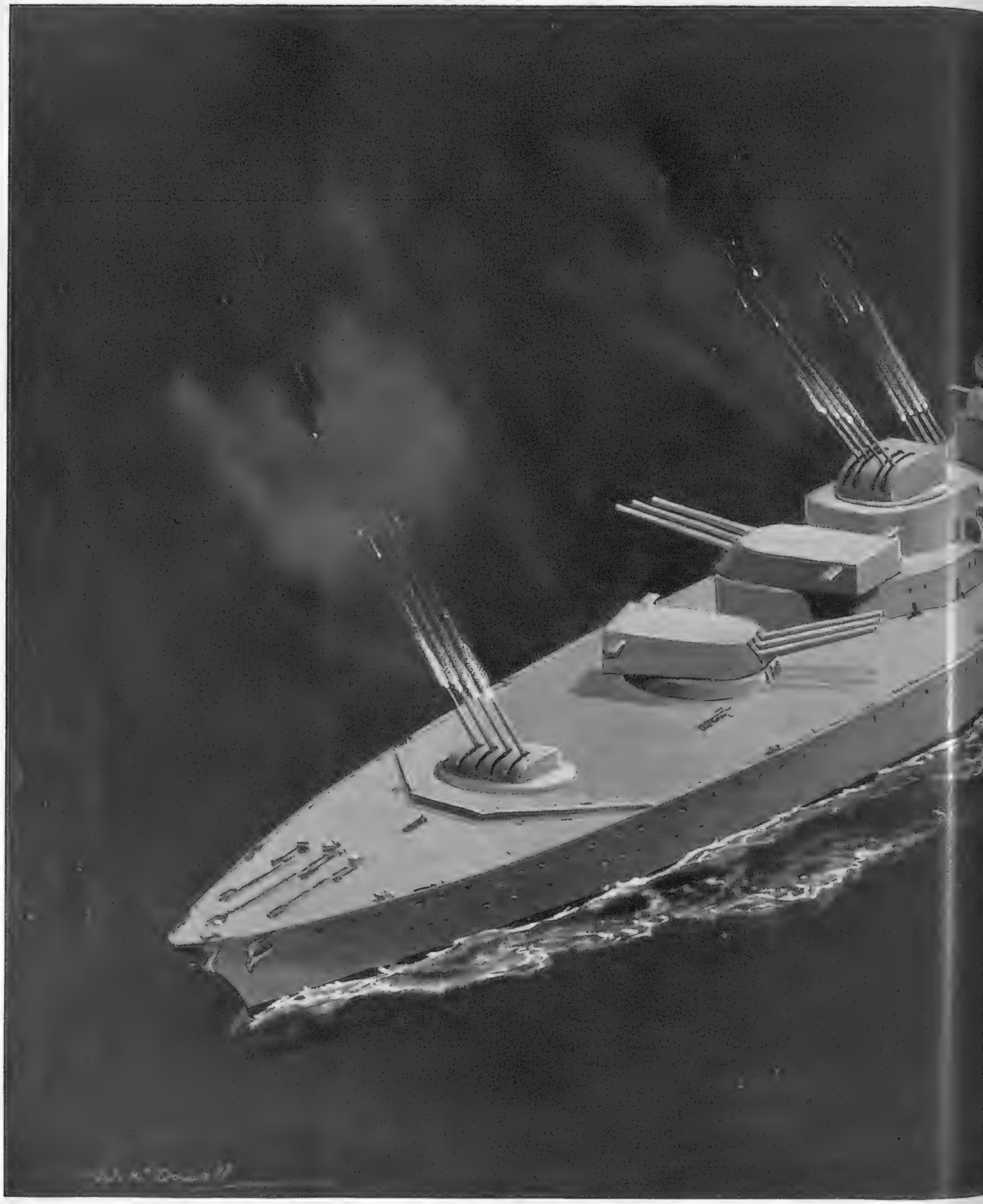
Drawing by Roland Davies

A WELLINGTON OVER BERLIN RELEASES ONE OF OUR NEW BOMBS: "THE AIRCRAFT SHIVERED AS THOUGH A SHELL HAD BURST NEAR IT . . ."

The recently published Air Ministry account of Bomber Command's offensive against the Axis has proved of such great public interest that copies were not produced quick enough to satisfy the demand. It is full of the most illuminating comment on the manner in which our bombing aircraft have been waging war against the enemy. The incident depicted by Mr. Davies above illustrates a bomber pilot's own description of a raid on the German capital quoted in *Bomber Command* in the following words: "Over Berlin there were so many searchlights that they lit up the ack-ack bursts . . . two rows of very vivid bright fires . . . we did one of those horribly steady run-ups and I saw the bomb flashes . . . there was a wee spot of light flak here . . . when I dropped the new bomb from 12,000 ft. the whole aircraft shivered as though a shell had burst near it . . . absolutely screeching round the sky. . . ." And now, as a final note, we might add that to-day's bombs are even newer and bigger and—more deadly!

FLYING THE "BARREL" OVER THE WESTERN DESERT: THE AMERICAN-BUILT GRUMMAN MARTLET, flown from land bases by the Fleet Air Arm, in combat with an Italian fighter plane over the town of Bardia—*Drawing by Roland Davies*

In addition to the fighter and bomber aircraft of the R.A.F. in the Western Desert, the Royal Navy has now taken a hand. A Fighter Squadron of the Fleet Air Arm, based on a land aerodrome, has joined in; and their Grumman Martlets, dubbed "Barrels" by reason of their shape, have been giving the Nazis and the Italians plenty to think about, so good is their speed and manœuvrability. The Martlet is a single-seater monoplane, for which (in 1940) a top speed of 325 m.p.h. was claimed: it is probable that, to-day, the speed is much greater than this, however. At the same time, its range is over 1,100 miles, which is considerable for this type of aircraft. Although the naval fighter squadron is operating from a land base, it is still being run on naval lines, with sailors as "ground staff"



NO CONNING-TOWER, NO AIRCRAFT, NO CATAPULT GEAR : A development of the U.S.A. greater protection

PROTECTING the BATTLESHIP of the FUTURE

What U.S. Naval Designers Plan — a Ship Bristling with Twenty-Four Anti-Aircraft Guns in Special Turrets Fore and Aft

Described by FRANK BOWEN

THE design of a battleship is always a compromise, for even the biggest displacement is quite insufficient for all the features which are desirable, but generally it is arrived at by arranging that each department shall sacrifice something. Now a number of United States naval officers, who have been studying our Navy's experience very thoroughly, are so impressed by the necessity of giving capital ships a colossal volume of anti-aircraft fire to deal with modern methods of attack that they propose to do away with the battleship's aircraft and catapult altogether—and the U.S. Navy, it must be remembered, has been the keenest in the world on the air arm.

In 1914 it was considered that two 3-in. anti-torpedo guns, with their mountings altered for high-angle firing, were sufficient for the biggest battleship. After the war two guns were still generally considered sufficient, but they were a special anti-aircraft type: the 3-in. capable of firing thirty rounds per minute and the 4-in. twenty. Nowadays battleships carry at least six or eight improved 4-in. or 4·7-in. guns, backed by multiple 2-pounder pom-poms, multiple heavy machine-guns and light machine-guns firing rifle ammunition. The King George V class mounts sixteen 5·25 dual-purpose guns, fit for use against torpedo craft or aircraft, in double turrets four on each side, so that eight guns are available against surface attack on any bearing and sixteen against aircraft over a large part of the compass. This is a new gun whose details have all been kept very secret but which is believed to be particularly fine. The U.S. Washington type of battleship mounts twenty 5-in., dual-purpose, 50-pounder guns, arranged in the same way but with an extra turret, so that two more guns fire on either broadside but the same number bear forward and aft as in the British ships.

When the first of these ships was laid down in 1937 this was regarded as ideal, but the American Navy is not satisfied with it now. It demands a more powerful battery, far better placed to obtain an

Washington type of warship with special anti-aircraft turrets, "countersunk" in the deck fore and aft for in warfare of the future—*Drawing by William McDowell*

Here is a first-class subject for many a wardroom "cag" (defined as "dogmatic assertion followed by flat contradiction and personal abuse"!) concerning "countersunk" turrets on the forecastle and quarterdeck. This special drawing shows a development of the U.S.A. Washington type of warship in which the aircraft, catapult gear and the two conning-tower positions have been sacrificed to give room for greater anti-aircraft gun power. In addition to the nine big guns in three turrets, she is shown with two "countersunk" turrets and four other turrets each carrying four 5-in. guns, also eight multiple pom-poms each of twelve barrels. The big difficulty to overcome would be arranging for sufficient magazine space to accommodate the enormous amount of A.-A. ammunition needed to supply so many guns. The drawing inset *on the right* shows a "countersunk" turret mounted under the big guns. As obviously the blast from these might injure the big guns (or vice versa), it would be necessary to train the latter out of harm's way when the A.-A. guns went into action, as shown in the larger drawing. It will be necessary, and the Americans have already discussed the point, to provide very elaborate drainage systems to prevent the water, which is bound to flow over the deck, getting down to the magazines and ammunition handling rooms under the turret: the colossal amount of ammunition required by the A.-A. guns also demands large magazines well ahead and astern of the normal thick belt protection, which will mean more problems for the extra weight and for strengthening the ends of the ship to support it

improved field of fire, and suggests twenty-four or even thirty-two 5-in. guns for each of the new ships, backed by a large number of multiple pom-poms mounted in bunches of twelve, instead of the present limit of eight, to obtain a better "cone of fire" to catch aircraft like a shotgun catches grouse. The mounting of such a number of guns, with the best possible field of fire and an uninterrupted ammunition supply for the most voracious weapons ever known, presents colossal problems.

It is obviously impossible to group twenty-four guns on either side of the midship superstructure, an indifferent position at the best of times owing to their inability to fire across the deck, when twenty are so crowded in that position that there is a danger of disaster by a single big shell. The general idea is that they shall be mounted in four gun-turrets instead of two, giving better protection for the same weight of armour, but it would be necessary to design new turning machinery in order that these heavy turrets might be trained with sufficient speed to follow flying planes.

The abolition of the forward and after conning-towers, which has long been argued in practically every navy, would give two of the finest positions, the guns able to bear on either broadside with an arc of training up to about 320 deg. It is suggested that two more turrets should be countersunk on the forecastle and quarter-deck, under the 16-in. guns and just high enough to fire at surface attackers. The remaining two turrets would be on either side amidships as at present. This arrangement would mean that only 16 per cent. of the broadside would be masked by the superstructure instead of 50 per cent. as now, there would be far greater concentration of anti-aircraft fire on any point of attack, and the maximum number of guns liable to be put out of action by a single big shell would be four instead of ten, as is just possible in the Washington type.

Very few naval officers would regret the passing of the conning-towers, which are often unoccupied in action by the senior officers for whom they are designed, on account of the very restricted view which they afford. The countersunk turret on the forecastle head is admittedly liable to interference by spray and solid water if the ship is steaming at speed, but it is quite possible. On the other hand, the one on the quarter-deck means the suppression of the battleship's aircraft, whose catapult and crane are placed aft in American and some British battleships. This has started an American Service "cag" as to whether aircraft should be abolished in capital ships altogether — a revolutionary suggestion which has received a surprising volume of support among some of the keenest and most progressive naval officers.

Before the outbreak of the late war, most of the experiments in flying aircraft from ships were carried out in battleships which had a long wooden platform rigged from the bridge to the bow, completely masking the fire of the fore-turret with half the main armament. This was quite impossible in war, but by 1917 small handy planes had been built which were capable of rising with a very short run, and these were housed on the tops of turrets and launched over rails clamped to the top of the big guns. Only the smallest planes could be used, with very limited range, and the waste was appalling, for if they were not near enough to fly to land they had to be abandoned in the sea.

It was a most unsatisfactory system, so at the same time an attempt was made to evolve a practical catapult, but it proved impossible to get the necessary speed. The idea was therefore put aside until after the war, but it was revived in 1922, and three years' hard work produced a really practical catapult in 1925.

The battleship is designed to fight in squadrons, to which are always attached cruiser and destroyer formations. Her planes are very seldom used for anything beyond spotting the fall of shot to correct the aim in long-range gunnery, the scouting and fighting duties being left to the aircraft from the accompanying ships. The new school in the United States is therefore arguing that these spotting aircraft should be taken off the battleships themselves and concentrated on board an entirely new type of small fast carrier, which should accompany the battle fleets and should accommodate these spotting planes only. These carriers would afford them the opportunity of alighting when they were spent, whereas the battleship's plane has to alight on the water and be hoisted in by a crane. When the ship cannot leave the line of battle the plane has to be abandoned.

ONE OF THE PROBLEMS TO BE FACED: With the forward turret, there is the problem of coping with the waves sweeping over the bows. This shows the bow-end of the great *King George V* and the position which is suggested for the forward "countersunk" turret

POLISH TROOPS ARE NOW HELPING TO DEFEND TOBRUK: HUNDREDS OF THEM, RELEASED FROM SYRIA, RECENTLY LEFT A PORT IN EGYPT. This picture was taken on the quayside as the Poles embarked on a British man-of-war for the Desert Garrison

WITHIN THE BATTLE-ZONE IN THE DESERT: A picture taken through the observation slit of a tank during a reconnaissance trip amidst the sand and scrub

"IN THE FIGHTING TERRITORY BEFORE TOBRUK": This picture comes from a German source. It shows a German long-range battery which has been moved up to a forward position near the perimeter defences. Note the size of the enemy guns, and the way in which they have been sunk into the flat desert in order to minimise the risk of recognition by reconnaissance aircraft

A CAPTURED GERMAN DIVE-BOMBER IN THE DESERT: This is one of ten Ju. 87 German dive-bombers, manned by Italians, which all made forced landings recently on or near, our side of the frontier. This particular aircraft was flown back to a R.A.F. base by a British Wing Commander who had a series of exciting adventures on the way. It was the only one of the ten that was airworthy after its crash landing. All the Ju. 87's ran out of petrol and could not regain their aerodromes—the Italian pilots accusing the Germans, who serviced their machines, of only half-filling their petrol tanks

FROM THE WESTERN DESERT BATTLEFIELD

PUBLIC-HOUSE SIGNS IN THE DESERT FOR THE THIRSTY! Recently lorry drivers along roads in the arid desert have experienced a great surprise. This is the appearance of "pub" signs, denoting spots where refreshments and real liquor may be obtained! This one, being patronised by South African troops, is ironically named the "Noah's Ark"—in one of the most waterless tracts in the world!

THE DESERT TAILOR KEEPS THE TROOPS SMART! A native tailor is now supplying a long-felt want in the sandy wastes of the Western Desert. He has established himself in a tent at the edge of one of the British camps, and is ready to fix a tear or make a complete new suit of khaki drill. His trade sign is just another of the unexpected surprises which the desert affords

AN AMERICAN-BUILT MARYLAND BOMBER, first of the Squadron, takes off for an expedition over the enemy's lines in the Western Desert

A WIRELESS STATION OF THE R.A.F.: This control point, well camouflaged and sandbagged, can keep in constant touch with the Squadron whilst it is in the air

The Maryland bomber is an American-built aircraft, numbers of which are now in service with the R.A.F. in the Middle East. These have been shipped direct from the United States, and they have already performed yeoman service in the operations in the Western Desert. It was an American bomber built by the Glenn Martin Company which helped to take the Taranto pictures, it may be remembered. The work of the R.A.F. in Libya is stupendous: not only does it fight, but its bombing raids over the enemy's lines, its attacks on the supply bases in Cyrenaica and Tripolitania and its attacks on Sicily and on Italy itself, are now daily and nightly occurrences

TWIN-ENGINED, AMERICAN-BUILT, MARYLAND BOMBERS flying in formation. Many of these aircraft are now in service in the Middle East

GENERAL DE GAULLE as the artist sees him : This portrait is the work of Serge Rodzianko, a former Russian Cavalry officer. It is a study for a life-size canvas which is intended to hang in the Free French Headquarters here

THE FREE FRENCH MOVEMENT WITHIN THE FRENCH EMPIRE

An Analysis of the De Gaulle Movement and the Progress it has Already Achieved

By DOUGLAS GLEN

THE truth of the old adage, "Nothing succeeds like success," has never been more amply demonstrated than in the swift reactions of the French people to each new German advance or reverse. By temperament, no doubt, they are more easily enheartened by triumphs or cast down by disasters than the sober British, and when Russia's magnificent resistance holds up the enemy, enthusiasm for General de Gaulle and the Free French movement mounts rapidly. Unhappily, Allied losses profoundly influence their attitude and minimise their resistance to the Germans.

In Syria, for instance, as British and Free French forces advanced, large numbers of French troops and thousands of the Foreign Legion joined de Gaulle. When the Axis in Libya were halted on the Egyptian border, opinion in French North Africa became openly pro-British, and when the new Comité National Français was proclaimed on September 24 last there were fresh accessions to the cause of Free France from many parts of the French Colonial Empire.

In Vichy France, however, the truth is hidden from the populace almost as surely as in the occupied zone, and so complete is the subservience of Darlan and his minority Government to their German masters that the man in the street hears only of Allied defeats and reads nothing but allegations of British perfidy. One might think that in the unoccupied zone Nazi propaganda would be less effective than in the occupied zone, but actually the reverse is true. In German occupied territory everyone realises that news is manufactured in Germany and readily disbelieves every word of it, whereas in Vichy France its Nazi origin is less obvious just because the broadcasts are made and the newspapers written by Frenchmen, so that propaganda is much more insidious and effective. Yet in spite of Vichy and the German police, some real news trickles through, and people in the trams or in the Metro, in the shops and in the queues, pass on rumours that Goebbels would give his soul to suppress.

Nevertheless, 95 per cent. of the French people ardently long for an Allied victory. Disarmed, hungry and policed even in the unoccupied zone by Germans, they are powerless to take action against the 5 per cent. which, under the aura of Marshal Pétain, holds the reins. But detestation of the traitor Laval and hatred of the ambitious Darlan are growing at an alarming rate; sabotage is rife, and given even a small promise of Allied success, there is a prospect that the men of Vichy will be compelled to bow before the weight of hostile opinion that is accumulating against them.

Conditions under the Vichy regime are deplorable. Food is increasingly scarce and queues are lengthening for the little that is spared to the population by their insatiable overlords. They never see any of the food or medical supplies sent to alleviate their wants, all being seized by the Germans for their own use. An enormous percentage of their home-grown produce is requisitioned by the Commission to be sent to Germany, and on every hand they are robbed of the bulk of the products of their industries. It is largely a question of food—not inclination—that makes Frenchmen labour in German-controlled factories, turning out aeroplanes and armoured cars to help towards a Nazi victory over France's former allies.

The Legion des Combattants, an organisation which was originally somewhat akin to the British Legion, has been subverted by Darlan and is used as a police force through which he and Marshal Pétain hope to hold down the people in imitation of the infamous Gestapo. Anyone who is critical of the administration—even boys distributing tracts—are being continually seized by members of the Legion, thrown into prison or on to the streets without means of livelihood. German police are penetrating everywhere into the towns and villages, and a new organisation—Companions de France—is training the youth of France in the same vicious way as the Hitler Youth has been moulded into the Nazi pattern.

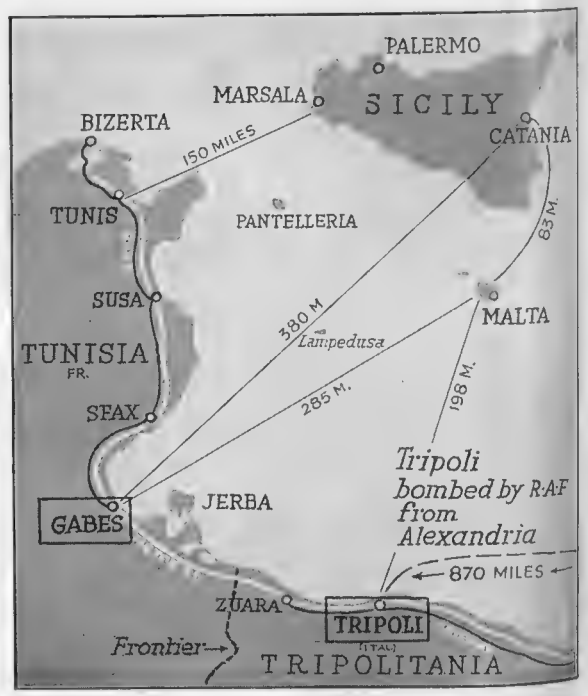
Marshal Pétain, though he is still venerated as the hero of Verdun and tolerated on account of his age, has lost prestige and power since, on August 12, he abandoned all pretence at true government and declared that henceforth he would lead, delegating executive power to Admiral Darlan. Still Darlan found it necessary to associate himself as much as possible in the eyes of the public with Pétain, so as to shield himself from the sense of betrayal which predominates in the minds of most Frenchmen.

These two men, with their associates in the Government, connive at abuses of neutrality in their efforts to lessen the German tyranny by collaboration. Through Marseilles supplies for the Axis Powers are shipped in increasing quantities to ports in Northern Africa, checked only by the vigilance of the British Navy. Vichy makes no effort to prevent the flow, believing in a Nazi victory, hoping for it and looking to it as the only means to restoration of France's greatness. The Germans have permitted the reopening of French aeroplane factories on the basis of an unspecified percentage—undoubtedly the major part—of their output being sent to Germany.

THE QUEEN VISITS A FRENCH CONVALESCENT HOME : At this home, Free French naval forces recuperate from their wounds and illnesses. The Queen was received on arrival by General de Gaulle and by Admiral Muselier, Chief of the Free French Navy and Air Force. She chatted to the patients and listened to many of their experiences, her fluent command of the French language proving a great help in her conversations

GENERAL AND MADAME DE GAULLE : On the garden steps of their home in the country near London. It is only a few weeks ago that the General returned from an extended tour of the Free French colonies in Africa

AN ENGLISHWOMAN IS A LIEUTENANT WITH THE FREE FRENCH : Miss Rachel Ford is among the very few women—French or English—to have been awarded two palms (mentioned in Army despatches) to the Croix de Guerre which she was awarded for bravery whilst serving with the French Third Army in charge of ambulance workers. She left France via Bordeaux and is now engaged on administrative work at the Free French Headquarters in London



WHAT VICHY HAS CONCEDED TO GERMANY IN TUNISIA : The port of Gabes is virtually in German and Italian hands now. It became so when Vichy recently conceded to Germany the right to transport war material from there to Italian bases in Tripolitania for use in the campaign in Libya

THE FREE FRENCH LEADER IN THE FACTORY: In a characteristic attitude during an address to workers during a recent visit

INDEPENDENCE FOR SYRIA GRANTED BY THE BRITISH AND FREE FRENCH

Britain, in contrast to the Axis, stands for the self-government of the countries with which she comes into contact. British intentions in regard to Syria were explained by Mr. Churchill in the House of Commons when he declared that "We seek no British advantage in Syria. Our only object in occupying the country has been to beat the Germans." With the departure of the officials of Vichy France the way is clear for the Free French to implement the pledges to Syria which they, jointly with the British, gave to the Syrian people before the beginning of the military operations to expel Axis sympathisers. Syria was granted her independence when General Catroux of the Free French Forces, formally handed over in a broadcast speech from Damascus. The new President is Sheikh Taggadine, who is pictured above reviewing a guard of honour of Free French troops outside the Town Hall

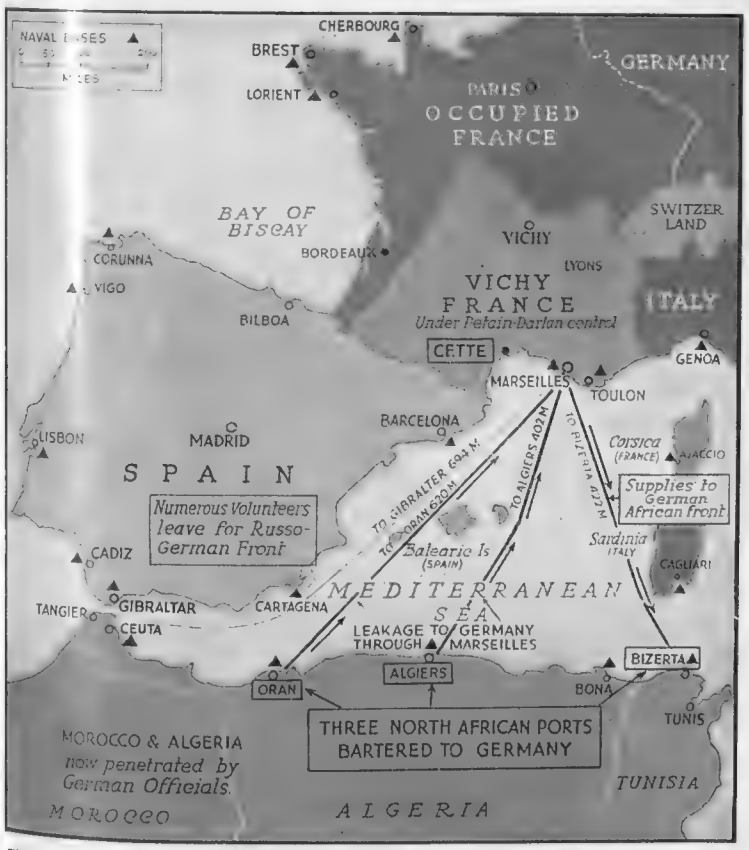
And, since British attacks have rendered too hazardous for use Italian harbours in Tripoli, Vichy has recently conceded to Germany the right to transport war material from the port of Gabes in Tunisia to Italian bases in Tripolitania for use in their campaign in Libya.

Even worse is the state of affairs in Alsace under German occupation. There is forced labour, methodical oppression and pillage, the Germanisation of all institutions, religious and educational, and proscription of the French language in the schools. Even those with French names must change them for German.

In Morocco and Algeria the atmosphere is much the same as in France—strongly de Gaullist but powerless in expression. The police make mass arrests and ex-Servicemen suspected of Free French leanings are persecuted and imprisoned. The Legion des Combattants, stronger than in Vichy France, watches over and spies on the population, the Gestapo is ubiquitous, and daily false charges of Communism are brought against men whose worst crime is their patriotism.

No one took the Italian Commission very seriously and conditions have changed for the worse since the Germans came. Concentration camps have sprung up and imprisonment, executions and forced labour are the rule for those who criticise or complain. Yet although public opinion is again 95 per cent. de Gaullist, and strengthening, it cannot find an outlet, for the administration is at the beck and call of the German Commission. Weygand, who once declared that he would never co-operate with the Germans, has lost power owing to the replacement of his Army commanders and the Prefect of Algeria by men who are servants of the Vichy Government.

Strong enough at one time to oppose Darlan, he can do but little, surrounded as he is by officers with pro-Nazi sympathies, and it is useless to look for any uprising in North Africa against the Germans or the Vichy Government. The extent of German influence is shown by the recent decision of the Resident General to extend the racial laws to Morocco, where the Jews are numerous and wealthy. Even the Arabs, anti-Semite though they be, were indignant, and the Sultan has refused



THE LEAKAGES THROUGH THE BRITISH BLOCKADE FROM NORTH AFRICA: Marseilles is the great clearing-house for goods from the North African French Empire. From Oran, Algiers and Bizerta a flow of valuable commodities reaches France, and of these Germany has her pick. These North African ports are also being used by Vichy as a bartering counter in their endless negotiations with the Germans

RADIO ACTIVITY IN SYRIA IS NOW UNDER FREE FRENCH CONTROL: The sorting-out of news and music which is to be transmitted over the wireless in Beyrout is done by a Committee under the supervision of M. Lassaigne, the head of the Radio and Press Services in Syria. The Committee is composed of French, British, Arabs, Lebanese and Syrians: their principal task is to discuss the news and to censor it before its transmission to the populace

to sanction the application of the laws. Frenchmen everywhere are profoundly impressed by the unfaltering strength of British resistance and by the bravery of the Russian defence. In France itself, in French Africa and overwhelmingly from those parts of the French Empire that can free themselves of the fetters of Vichy, all eyes are turned on the focus-point of French hopes—General de Gaulle.

On September 24 the new National Committee of Free France was proclaimed in the name of the people and of the French Empire. Therein General de Gaulle, head of the Free French, is nominated President of the Committee, which will exercise through him the functions of Government which normally devolve upon the French Ministry. All ordinances, rules and regulations will be valid in the signatures of the General and a member of the Committee, and ultimately a consultative assembly will be constituted, destined to furnish to the Committee an expression of national opinion. The innovation forms a groundwork for co-ordination and representation of the views of the constituent parts of the Empire loyal to de Gaulle, and thereby, rather than limiting, strengthens his position. The recognition of Syrian independence is a move towards freedom, and the formation of the National Committee lays the foundation of a return to democratic tradition.

To Brazzaville, capital of French Equatorial Africa, where General de Gaulle has made his headquarters, Frenchmen have been steadily flocking from all over the world to enlist in his army. Important results are confidently expected to ensue from the recent visit of the Cunningham Military Mission.

For the Chad, in which it lies, is a country abounding in natural riches and extending about 1,000 miles southwards from Tibesti. It has been described as the key to Africa, for with the Free French firmly established there, any extension of German influence into the Congo or German South-West Africa is very unlikely.

DRAWING THE EMPIRE CLOSE TOGETHER: The Work of the Mighty Organisation Now Known as "Cable and Wireless"

Described by CHARLES GRAVES

THE Englishman is famous for his habit of taking things for granted, even in wartime, and grumbling when service is not exactly 100 per cent. One of the many things he accepts as his rightful due is the Cable and Wireless. It never occurs to him that British cables might be cut by the enemy, or that English wave-lengths might be jammed. He certainly does not realise the gigantic increases in traffic since September 1939. In the World War the cables and messages were almost entirely one way—of relatives wishing to contact their soldier son, husband or brother. In this war, thanks to indiscriminate bombing by Germany, the traffic is doubled. The sailors, soldiers and airmen are sending frantic messages asking how their civilian relatives are. In addition, there are the thousands of evacuee children in various parts of the Empire and the United States who have been sent across the seas under the Government Scheme.

Once a month Cable and Wireless allows a free message to be sent both by the parents and the children. So far, only twelve parents and forty-eight children have failed to take advantage of this facility. The messages have been carefully thought-out, and the thirty-seven standard texts include (for the parents) the following:

(1) Sending photos. All well here. Love.
(2) How are you getting on? All well at home.
(3) Glad to know you are now happy. All well here.
(4) Is there anything you specially want?
(5) Glad you like your new surroundings. Write again soon.
(6) So glad you like your new school. Writing. Love.
(7) Always with you in thought. Love. Write often.
(8) Sorry to learn news. Love. Writing.

The standard texts for the children include:

(1) Getting on well at school. Love to all.
(2) Have quite settled down now and am very happy. Love.
(3) Very happy in new home and settling down fine.
(4) Quite well and enjoying myself. Love.
(5) Miss you a lot, but very happy here.
(6) Going away on holiday. Will write.
(7) Have had a lovely holiday. Writing. Love.
(8) I am having a good time. Chins up. Love.
(9) Good news for you in next letter. Love.
(10) Have passed examination. Writing.
(11) Sending photos. All well here. Love.

So much for the evacuated-children service. There are over 130 standard texts for messages to and from the armed forces, and these have now been listed in order of popularity. Here are the first dozen:

(1) All well and safe.
(2) All my love.
(3) All my love, dearest.
(4) Keep smiling.
(5) My thoughts are with you.
(6) Fondest love, darling.
(7) You are more than ever in thoughts at this time.
(8) Letters received. Many thanks.
(9) Fondest love and kisses.
(10) Telegram received. Many thanks.
(11) No news of you for some time.
(12) Loving birthday greetings.

It will be noticed the predominant mood in these is affection and reassurance. Cables in connection with money and parcels are right at the bottom of the list.

Every day 40,000 cables and radio messages pass through the head office in London. Each of these has to be scrutinised by one of the seventy-five censors installed at Government expense. It is not unusual for 10,000 to 15,000 messages to be received in one day for transmission to the troops overseas. It is seldom that action has to be taken as the results of secrets being revealed, and on the whole both the public and the armed forces are security-minded.

There has been some criticism in the past about the delay of cables and radio messages to the troops in the Middle East, but Cable and Wireless cannot honestly be blamed for this. First of all, the addresses of the troops all have to be coded at this end, and decoded at the other, all of which takes time. In addition, troops are moved rapidly from point to point, and it is frequently difficult for the message to catch up with the soldier out in the desert or wherever he may be.

Cable and Wireless does not serve Iceland, by the way. That is the responsibility of the General Post Office.

We have all read about the transmission of photographs to and from Moscow. Over 300 were received from Moscow, the last being on October 15. All these were received in London by Cable and Wireless. The machines on which they arrive and are sent look like large black ice-cream containers, and it is astonishing how clear are the photographs received in this magic-box manner. The photographs each cost five pounds. The picture service is now in operation between London, Tokyo, Melbourne, Buenos Ayres and New York. As time goes on, this picture service will be established in each of the 250 stations of Cable and Wireless. Indeed, Sir Edward Wilshaw, the chairman of Cable and Wireless, assures me it is possible that the ultimate end of telegraphy will be facsimile transmission instead of the Morse-and-recorder system.

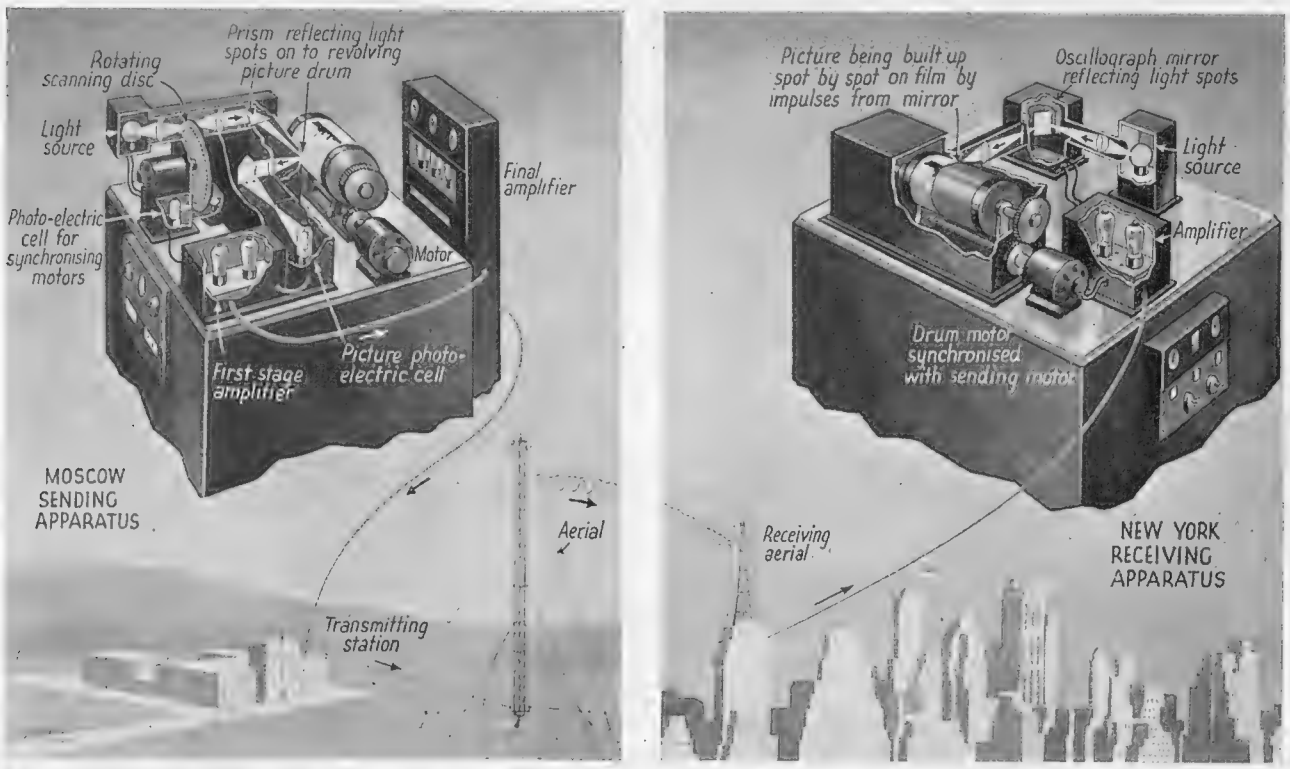
But what is Cable and Wireless? Well, it is the British overseas telegraph system. It is a combination (formed in 1929) of the old cable companies, Marconi, Government wireless and Government cables, and its birth was necessitated by the fact that Government wireless had been competing so fiercely with the cable companies and the Empire Government All-Red route that they might well have been ruined. It is the conveyer of news, but not the purveyor, and never interferes with any news agencies. As such, it has a monopoly in the British Empire, except for the broadcast news which goes out from the Post Office. Its world-wide communications are of such strategic and commercial value that the chairman must be approved by the Government, after selection by the Board of Directors. For the G.P.O. has no overseas services except with the Continent, and you know what that means now. Through Cable and Wireless, we still have direct wireless communication with Switzerland, Russia, Turkey and Egypt, the latter being also in direct cable communication with London. There are also direct lines with Spain and Portugal, though not with Sweden. (Practically all British Government messages go by cable.)

Besides the strategic importance of Cable and Wireless, there is the human side. We have heard many times that the British Empire is one big family. Without Cable and Wireless this would be impossible, and, thanks to the imagination of Sir Edward Wilshaw, it has been able to show that commerce can be very sympathetic, particularly in its treatment of troops and evacuees.

To end on an historic note, it may be interesting to recall that the first practical land telegraph-line in the world was established in 1837 on the Great Western Railway, from Paddington Station to West Drayton Station, a distance of just over thirteen miles. The first submarine cable was laid between Dover and Calais in 1850, but was not a success. The first attempt, too, to span the Atlantic by cable in 1857 failed, and it was not until 1866 that the Old and New Worlds were permanently linked by cable. The first wireless signals across the Atlantic were sent from Cornwall on December 12, 1901, and received by Marconi in Newfoundland. The beam system really dates back to 1926, when it was perfected by Marconi. All of which is a far cry from the tom-tom, the Marathon runner, the beacon and the pigeon forerunners of Cable and Wireless.

P.S.—Cable and Wireless is carrying 400,000,000 words a year, and the error percentage is ·01.

ROSEMARY, JUDY AND ANN, sending their free monthly cable to their mother in London from their safe home in Melbourne, Australia



HOW WAR PICTURES FROM THE RUSSIAN FRONT HAVE BEEN WIRELESSED TO NEW YORK—*Drawing by L. Ashwell Wood*

On the left is the sending apparatus: the photograph is placed on a revolving drum and a spot of light is focused on it through a prism. As the drum rotates it is also moved laterally, and the light spot traces out a fine spiral of 130 lines per inch. The beam of light is broken up 1,300 times per second by a scanning disc with holes in it. The light reflected from the picture passes through another prism to a photo-electric cell whose sensitiveness records the variations in light and shade of the picture. The photo-electric cell converts the light rays into electrical impulses and these, upon amplification, are sent out on the wireless carrier wave. At New York the weak current is picked up by an aerial, amplified, and passed on to an oscillograph mirror. This is oscillated by the amplified aerial current and reflects a light through a slit on to a similar revolving drum which is covered with sensitised photographic paper in a darkened chamber. The picture is thus built up spot by spot and afterwards developed

RECLAIMING THE MALAYAN JUNGLE: Bulldozers at work clearing the ground, assisted by natives who are hacking away the undergrowth. A scraper (in mid-distance) is levelling the ground

PREPARING FOR WAR IN MALAYA: Hacking Out an Aerodrome from the Jungle

Two drawings by William McDowell

Details have been received in London of the wonderful manner in which Malaya, during recent months, has been prepared to counter any move directed against Singapore or Australasia. One correspondent alone during the course of his tour has actually touched down at more than twenty R.A.F. aerodromes, each of which has been torn out of the thick forest and worst swamp land in the world. The location of these bases is still kept secret; and it is doubtful whether they could be perceived by prying eyes from above, so carefully have they been camouflaged and concealed. Clouds of fighters and bombers are housed in the jungle, which—only a few months ago—was impenetrable. It is the Works Department of the Air Ministry which was responsible for the work of survey: thousands of coolies tore paths through the jungle and made roads to the various sites. Then followed the gigantic bulldozers, which bit into the undergrowth and ripped out the great jungle trees by their roots: after the bulldozers came the scrapers—and soon the ground had been cleared and levelled and was ready for the hangars and tarmac runways. From the borders of Thailand, where the chief Malayan air base is now located (and very heavily defended!), right down to the tip of Singapore, the new aerodromes and the swarms of warplanes will help to defend vital British interests

CONCEALED IN IMPENETRABLE JUNGLE AND INVISIBLE TO ANY ENEMY EYE: Fighters and bombers at one of our secret aerodromes hacked out of the Malayan jungle, where the R.A.F. are ready to safeguard our interests in the Far East

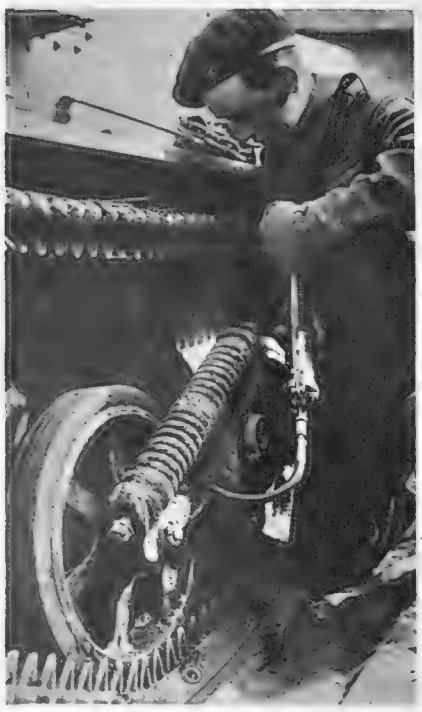
HOW THE TRACK IS LAID BY THE TANK ITSELF AND HOW IT LITERALLY PULLS ITSELF ALONG

In actual operation the track is curled around the driving-sprocket and track idling wheel. A part of the track, coming in contact with the ground, remains stationary whilst the tank pulls itself over it, until it is released and gathered up and then passed forward and relayed. Of course, this happens to every part of the track in quick succession. The large guide wheels keep the track in a straight line. It will thus be seen that it is incorrect to describe a tank as being "driven": it is not driven, but hauled forward by its own power

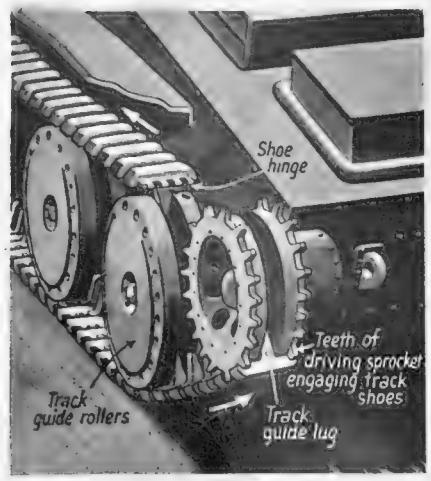
HOW THE TANK IS DRIVEN AND CONTROLLED

Written and illustrated by L. Ashwell Wood

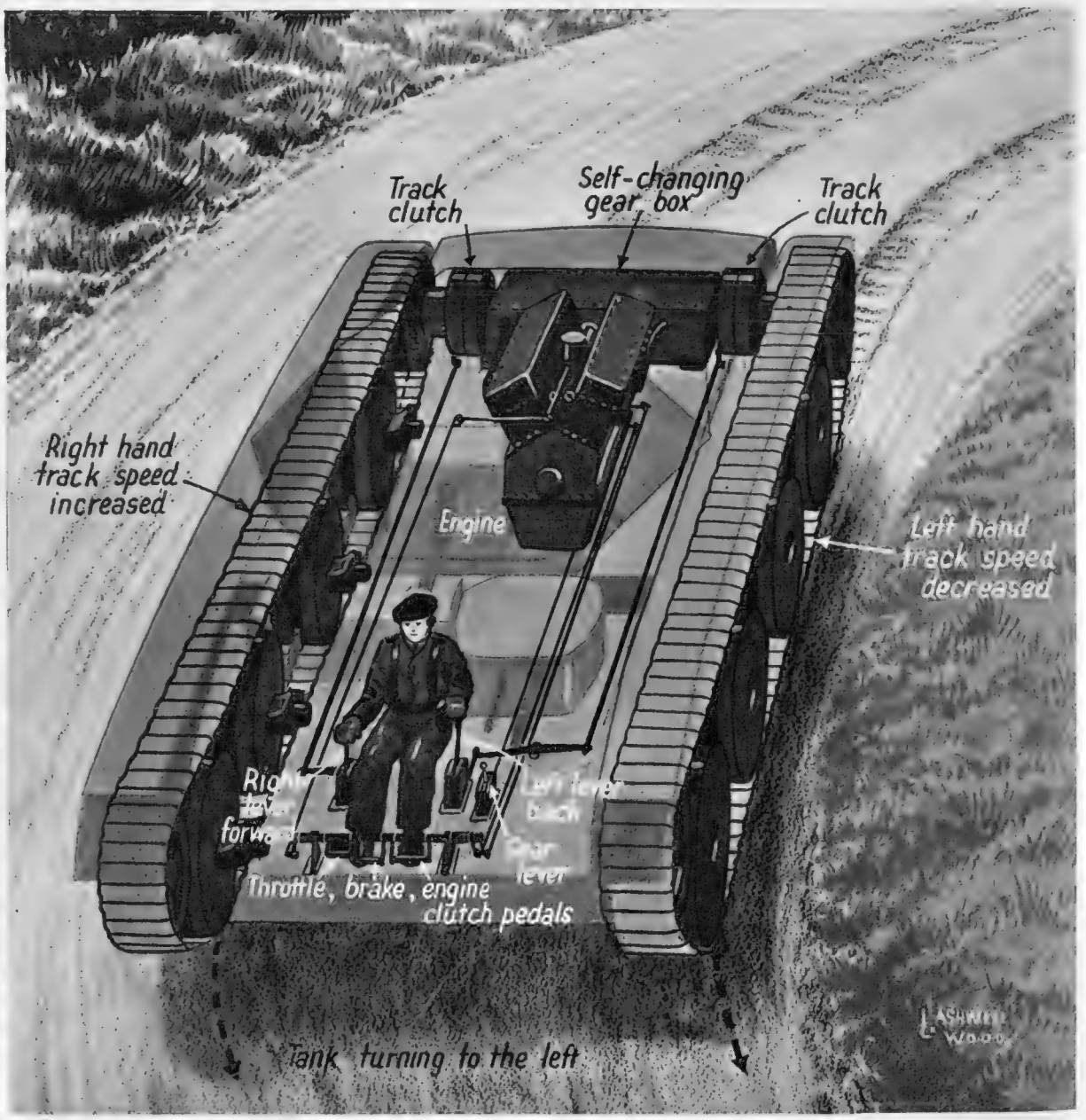
A tank which works on exactly the same principle as a caterpillar tractor moves, not on its wheels, but on an endless track which it lays down for itself as it goes. A part of the track coming into contact with the ground remains stationary whilst the tank pulls itself over it, releases it and passes it forward to be laid again. The weight of the machine is borne by steel wheels resting on the inside of the track. A large 16-ton tank will have an area of something like 4,000 square inches in contact with the ground at the same moment. Four large motor-car tyres have only 500 square inches! The weight of the tank is so distributed that it does not exert any more pressure per square inch than the foot of an average man—that is to say, 8 lb. per square inch. It is thus able to proceed without slipping or without digging itself into the ground.



SERVICING THE RUNNER MECHANISM: The auxiliary wheels of the tank perform the twin duties of supporting the weight of the vehicle and guiding the track. They also take all the jolts and stresses of the uneven ground over which they run. They are heavily sprung to absorb as much of the shock as possible. This Tank Corps mechanic is seen pumping grease into the spring bearings with a powerful grease-gun. The work is done by members of the actual tank crew



HOW A TANK IS HAULED FORWARD: The twin driving-sprockets are driven by the engine; by means of their teeth they pick up the laid track and pass it forwards: in doing so the tank, being attached to the driving-sprockets, moves forward over its own track. The large guide wheels also take the weight of the tank on the track



HOW A TANK IS CONTROLLED: IN PLACE OF A "WHEEL" THERE ARE TWO HUGE LEVERS

To operate a tank, the driver first starts it forward by engaging a gear and operating an engine-clutch similar to that of an ordinary motor-car. The steering, however, is entirely different from the hand steering-wheel of the car: changes in direction are achieved by varying the speed of the two tracks. Control is effected by two steering-levers, right and left. If both tracks revolve at the same speed the tank will go straight forward: if, however, the left lever is pulled back (as shown above), the left track will be slowed down and the right accelerated by a touch of the throttle. This causes the tank to turn to the left; further, by braking the left track the tank can be swung round in its own length. The steering-levers operate steering-clutches attached to the final drive. To turn right, a similar procedure is evolved. A skilled driver can control a tank as deftly as a good car driver can control his vehicle on the road

FEEDING THE NATION AND THE FORCES

(I) *The Work of the Ministry of Food in Relation to the Civil Population*

Described by D. Ap SIMON

FEEDING THE ARMY AT HOME AND ABROAD : At the top is the Ministry of Food, working with the Army Catering Committee and the Quarter-Master-General. The food is conveyed to overseas positions through co-operation between the Ministry of Shipping, who supply the ships, and the Admiralty, who provide the escorts for the ships. Much food goes direct to the fighting zones from the Colonies, etc. : at home, deliveries are made direct to the R.A.S.C., who supplement these with local purchases. From the Distribution Centre the food is actually handed out to the various units

AFTER more than two years of war Lord Woolton recently announced that stocks of sugar and wheat in this country are now large enough to warrant the release of valuable tonnage for other purposes. And despite heavy shipping losses, the ration of several of the more important foodstuffs has been increased during the last few months.

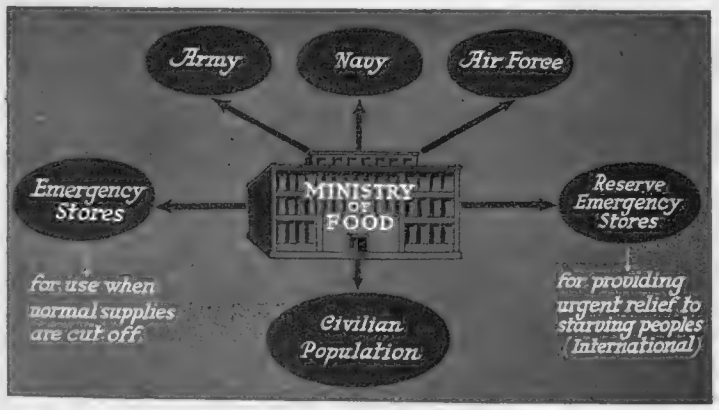
In all this we have to thank the Ministry of Food—or, perhaps, its predecessor; for the Ministry was not constituted until September 8, 1939, five days after the declaration of war. Long before that the Government had foreseen the difficulties that would arise in feeding the civil population if war should come, and had laid its plans carefully.

How much our comparatively blessed state is due to this foresight may be understood by recalling the food situation at the end of 1916, when Britain had been at war for nearly two and a half years. Not until then did a limited method of control begin, and meanwhile prices had risen 84 per cent. Full control only came early in 1918, by which time prices had rocketed.

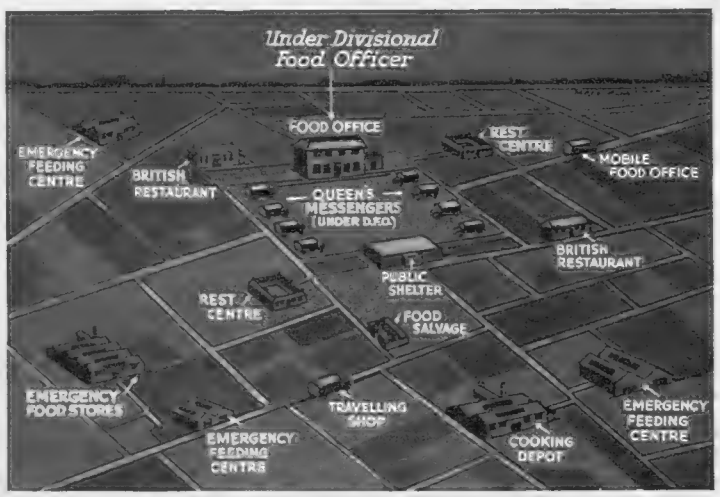
Normally, half the country's food is grown at home, and although production has been increased, there are still enormous quantities of food and animal feeding stuffs to be bought abroad, transhipped from overseas, stored and equitably distributed. The Ministry of Agriculture is responsible for home production, the Ministry of Shipping for tonnage, and the Treasury for financing purchases. It is the job of the Ministry of Food to ensure the total adequate supply and its distribution at a reasonable price. Its principal function is to feed the civil population, but it has also to provide stores for use in case of invasion or other emergency and to buy in bulk such provisions as may be allocated to the various branches of the fighting Services.

In the case of the Army, Navy, and Air Force, allocations are made on the requisition of the War Office and the Admiralty, and once the stores are drawn, the Ministry of Food has no further concern in its distribution. It is when it deals with food for the civil population, however, that the whole vast network of organisation comes into operation, and all the detailed work of handling supplies—bringing them from far-away plantations or factories, through wholesale retailers and on to the table of the actual consumer—has to be done smoothly and efficiently, without disturbing the normal activities of legitimate traders.

Actually, the work of the Ministry falls into three main divisions—Supply, General Services, and Retail Distribution, which includes rationing. Supply covers the various commodity control schemes, transport and storage, overseas purchases and price policy; and among General Services are such important matters as finance, food economy, Parliamentary and legal work, and the all-important business of keeping the public fully informed about the right use of valuable foods, avoidance of waste, and, in fact, all the complicated and enlightening operations on the "Kitchen Front."



THE MAIN TASKS OF THE MINISTRY OF FOOD : A diagram which portrays the problems of distribution in the simplest terms. Six great calls are made on the Ministry's supplies—those of the Navy, Army, Air Force and civilian population, and of the Emergency and Reserve Emergency Food Depots



THE EMERGENCY FOOD PLAN TO COPE WITH EVERY NEED OF THE CIVILIAN POPULATION : The central feature in each area is the Food Office under the control of a Divisional Food Officer. Around him he has emergency food stores, emergency feeding centres, cooking depots, a mobile headquarters, etc.

Approximately, food to the value of £600,000,000 will have been imported into the country during the current year. After a Committee of the Overseas Purchases Board has considered proposals by various Commodity branches of the Ministry, the Board of Trade places the contracts for the purchases abroad and the Ministry of Shipping allocates shipping space. But here, other factors have to be taken into consideration. Estimates must be made in advance of probable losses due to sinkings of merchant tonnage by U-boats and by air attacks, and larger quantities bought than will ever arrive. In some instances exceptional losses must be made good, further contracts placed and more cargo-space requisitioned. The food now becomes the property of the Ministry of Food which sells direct to the big No. 1 suppliers; thence it passes to the wholesaler and on to the retailer. The more essential foodstuffs, meat, sugar, tea and oils, are completely controlled, and the Ministry is the sole purchaser of all home-produced meat, sugar and creamery butter. Most of the controlled foods, except meat, pass out of the Ministry's ownership at the wholesale stage, thus causing as little interference with normal trade channels as possible, further distribution only being controlled by means of maximum price orders or rationing. On the other hand, certain foods such as potatoes, milk, tinned herrings and salmon, do not become the property of the Ministry of Food at any stage, control being effected solely by price orders. Maximum retail prices of almost every kind of food are in operation, and they are in most cases stabilised throughout the year, so that only a few prices vary according to storage and waste as the seasons advance. Egg prices, for instance, are now practically standardised and are unlikely to move upwards to any appreciable extent.

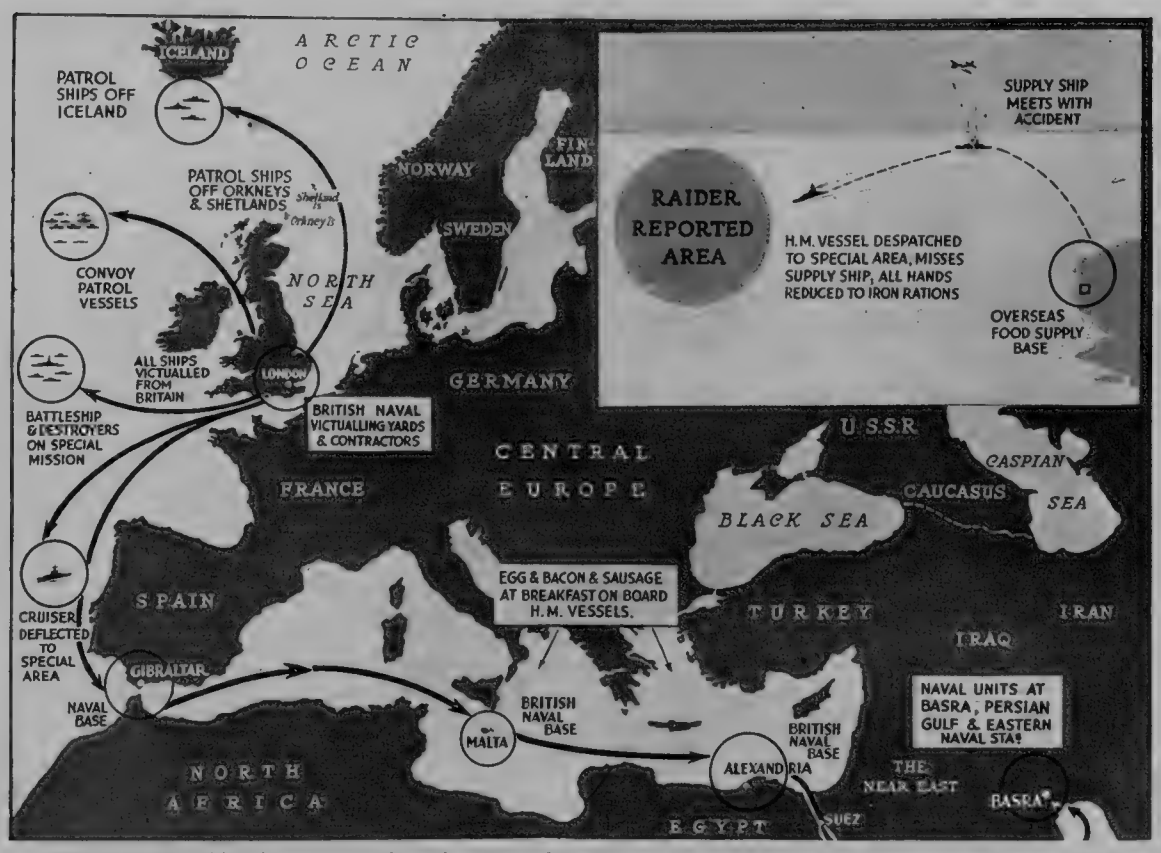
At the beginning the prospects of the development of intensive war in the air made concentrations of food in vulnerable areas inadvisable, and stocks of tea, butter and other foodstuffs were dispersed over different parts of the country, whilst Smithfield market was at first evacuated to a ring of meat depots round London. Decentralisation of transport and of communications was also effected, and a Divisional Food Officer was appointed for each Civil Defence Area ready to act as local Minister of Food in an emergency.

Experience during the last war had taught us that centralisation of rationing would not work, and therefore a comprehensive organisation operating on a Local Government framework was set up, responsible to the Ministry of Food. Under the Divisional Food Officers, some 1,500 local Food Control Committees act in the area of each local authority, operating usually through the Town Clerk or the Clerk to the Council, both local traders and consumers being represented on the Committees. The general principle by which the Ministry is guided in buying and selling is that each commodity must cover its cost, and that there must be neither profit nor loss to the Government. In practice, however, the Ministry of Food incurs heavy losses so as to enable meat, milk, flour, bacon and cheese to be sold below cost and keep down the cost of living.

Vast reserves of food, of course, are stored in the country, but quite apart from such essential accumulations, plans have been completed for dealing with the incalculable situation which might arise in the event of invasion. Communication might break down, and different areas become isolated, whether invasion came by sea or air. To meet such an emergency, over the nineteen divisions covered by the Divisional Food Officers, the Ministry of Food has provided a total of 100 bulkhead sections of the country, each of which has become entirely self-supporting, independent of any source of supply outside that area. Under the direction of the military authorities, the Ministry have worked out the quantities of food required to maintain the population for a considerable period of time, local traders have been taken into consultation and volunteers are ready, organised to act as Voluntary Food Officers if the need should arise.

IN CASE OF AN INVASION : Bulkhead food areas have been formed as a protection in the event of an invasion. One hundred of these areas have been formed and each of them has become entirely self-supporting

There are now twenty-two convoys of the Queen's Messenger Service, ready to go anywhere at a moment's notice, carrying food and water wherever it is needed. There are the mobile canteens, 800 British restaurants, not only supplying food, but cooking it too. There are emergency meal centres in all towns with populations exceeding 50,000, designed to feed 10 per cent. of the inhabitants; Rest Centres, stocked with adequate food and water, where the homeless can be cared for after a raid; and in London and in thirty provincial towns, feeding arrangements are provided in the air-raid shelters.



A COMPLEX TASK, which is also sometimes interrupted by the enemy : This diagram gives some idea of the complexity of the problem of how to feed the Royal Navy. As war vessels range farther and farther, so more plans have to be made to meet the needs of both officers and men. And when the enemy takes a hand, matters become ever more complex and difficult !

(2) FEEDING the NAVY

A World-wide Catering Job

THE modern Navy has such a high standard of catering that the N.A.A.F.I. has a very hard task in victualling it all over the world in peacetime. In war, when ships are constantly unexpectedly appearing out of the blue, and disappearing into it again at the shortest notice, or being diverted by wireless to a spot hundreds, or even thousands, of miles away from the port where their stores have been sent to wait for them, it is heart-breaking. Yet the Navy remains the best fed in the world, except that of the United States—and American food and messing methods would start a mutiny among conservative British bluejackets in no time.

The N.A.A.F.I. is in charge of all supplies, buying from contractors or drawing from the Royal Victualling Yards as required, and the paymasters control the messing on board the ships, which they regard as being one of the most difficult parts of their very intricate range of duties. Each side maintains that it has the hardest part: the N.A.A.F.I. to arrange the supply of plenty of the right food within the maximum cost allowed by the Admiralty—a sum which rarely exceeds 1s. 3d. per head per day in peacetime—and to get it to the spot where it is needed, and the paymasters to arrange the meals without offending the medical officers' strict ideas on the distribution of vitamins or giving the ratings good reason to grumble.

Those in charge at the Admiralty know the British bluejacket well enough to be certain that he will grumble as a matter of course, but even in wartime there is trouble for the victualling staff if he is given real grounds for doing so. Formerly, he had a regular routine of salt pork, salt beef (so hard that model ships were occasionally carved out of it), pea soup or duff, according to the day of the week, but now my lords warn paymaster officers against such mistakes as giving the men herrings in tomato sauce for supper and tomato soup for dinner next day.

Ships in home waters are comparatively easy to feed regularly, in spite of the risk of supply ships being torpedoed or bombed on the way up, and there is very seldom any reduction in their fresh food. Every modern fighting ship is fitted with very elaborate refrigerating machinery to keep the temperature of the magazines down to a safe point, and this also cools big storerooms which accommodate fresh supplies for several days. When, for instance, a battleship like the *Prince of Wales* is suddenly ordered to sea to chase and destroy the *Bismarck*, there is a chance of supplies running out and all hands being reduced to "iron rations"—not salt horse, but tinned meats of the best quality. As long as it does not last too long, the men rather enjoy this as a change.

With ships in foreign waters it is quite another matter. Before the war nearly all were victualled from home, even if the food had to be imported, but in war the depletion of the food supplies of the nation has to be avoided at all costs and supply ships are kept out of the danger area as far as possible. The necessity of conserving foreign currency causes the Navy to buy as little food in neutral ports as can be contrived, although fruit for the health of the men is encouraged, and nearly all the food on distant stations comes from various parts of the Empire, and the United States under the Lease-and-Lend Act. Care is taken that the meat, for instance, is dressed in British style as far as possible, otherwise the ratings would be suspicious.

So, except when it is quite impossible or the doctors pronounce a ban on account of climate, the bluejacket gets his five meals a day wherever he may be. As soon as he turns out of his hammock, he gets hot Navy cocoa, the best in the world. At breakfast he will have two eggs, or an egg and bacon or sausage, or two sausages or fish, with generous quantities of bread and butter. Dinner consists of soup, meat course with two vegetables, sweet or fruit, tea is generous and supper consists of meat, fish or cheese with vegetables or pickles. Tea is served with breakfast, tea and supper, and drunk at any odd moment during the day, much to the distress of the doctors.

It is not always possible to supply the regular dishes in wartime, but the standard is maintained, and it demands organisation just as difficult as the supply of fuel and ammunition.

F. Bowen

COOKING UNDER DIFFICULTY : The galley of one of the smaller types of warship in bad weather—*Drawing by William McDowell*

No matter what the weather, the Navy gets its food at regular times, even though the galley ventilators may be closed to keep the water out, and the pans are sliding to and fro on the ranges. In the drawing, a luckless seaman, entering with a mess tin, is followed by a sea—which adds to the discomfort. Galleys vary greatly in both size and shape : on destroyers, for instance, these are mostly primitive coal-burning ranges ; but larger ships have oil-fired ranges, or even electric. Also, the cooking arrangements differ : in small vessels the men prepare their food in the mess deck and bring it to the galley to be cooked, whilst in most big ships all the preparation, as well as the actual cooking, is done in the galley

(3) FEEDING the ARMY

At Home and Overseas

A FEW miles east of Suez there are many strange, cone-shaped hillocks rising abruptly from the flat, sandy plain. No natural formations are they, but mementoes of the provisioning of an army : huge dumps of bully-beef tins and other refuse left by the British when they defended the Canal against the Turks during the last war.

When passing some of these curious, sand-covered excrescences recently, whilst on a journey across Sinai from Aqaba, inevitably I thought of the huge quantities of food that must be gathered and transported across the seas to maintain our armies in the field, and of the complex organisation needed to ensure, down to the smallest detail, a continuous, never-failing supply.

It is significant that many people believe that our soldiers are provided with rationed foods almost *ad lib.*, whilst the scale of the poor civilian is severely cut down. That such a belief exists is due, no doubt, to the men's appearance of fitness, but it is also a tribute to the excellence of the scientific diet they are given. Nevertheless, it is far from the truth.

Certainly the men are well and adequately fed, but an intelligent application of the science of dietetics has made it possible so to balance the soldiers' rations as to give them all the vitamins

FEEDING THE MEN IN LONELY OUTPOSTS : A travelling canteen in the Cotswolds which visits isolated A.A. posts every day. The men at these points are unable to get to the shops, and the daily visit of the canteen is very welcome. Letters can also be posted in a box on the car

and nutrition they need, whilst actually the meat ration is only half what it was during the last war, and the quantities of sugar, fats, and every other food is reduced.

Obviously, feeding the Army is a colossal undertaking. There are several million men under arms, and the normal full field service rations scale comprises no fewer than forty-three items of food and drink. Furthermore, so numerous are the races of the British Empire, and so many are our Allies, that more than eighty other ration scales have had to be devised to meet the peculiar dietetic needs. Czechs, Poles, Greeks, Malays, Sudanese, Arabs, Cypriots, Africans of many races, Hindus and Muhammadans all require special treatment ; Muslims have meat instead of bacon, Jews and vegetarians are given extra bread, fats and cheese in lieu of meat and bacon.

Other Departments of State besides the War Office handle this vast problem. Through the Ministry of Food, in the first instance, comes the food in bulk, purchased under contracts placed in every friendly market throughout the world. The Ministry of Shipping arranges transport and provides the cargo space ; and upon the Navy devolves the duty of safeguarding the ships that carry it. A War Office staff of experts, with special scientific knowledge and experience, decide ration scales and what foods are best suited to the needs of men on active service.

Before ever the precious cargoes are shipped, and before the Ministry has completed all its purchases, the Quartermaster-General must forecast his requirements. His task is especially onerous, for the Army is constantly expanding, its demands always changing as new theatres of war open up in places far distant, bringing fresh problems of climate, port and unloading facilities, problems of storage, refrigeration, transport from coast to the line.

Take, for instance, an expeditionary force of 250,000 men operating at a distance from their port of supply. To feed them, 500 tons of foodstuffs must be brought out of store, checked, inspected, loaded and sent up the line every day, by whatever means of transport are available—rail or motor-lorry. If the distance is far, there must be intermediate depots up the line where stocks can be held ; whilst at the port of delivery

large reserves must be collected and constantly replenished.

Often at places abroad, fresh meat and vegetables are produced in sufficient quantities to ease the problems of shipping and supply considerably, but in many cases almost all the food required must be collected and transported. Nowadays, however, shipments are made to the nearest issue, or to centralised storage depots conveniently situated. Food from the Dominions, the U.S.A. and other sources destined for overseas forces is consigned in this way, without passing through this country at all. Food for the troops overseas is not sent out from England.

The actual work of handling supplies is undertaken by the Royal Army Service Corps, who also undertake purchases of local produce. From the numerous depots in the Middle East and elsewhere,

MEALS UNDER ACTIVE-SERVICE CONDITIONS: The old, familiar "dixies" come into use again during large-scale manœuvres in the Southern Command

DROPPING FOOD FROM THE AIR: A special method of revictualling bodies of men cut off from other sources of supply. This method was adopted at Calais and is still being carried out in the Western Desert

where enormous food reserves are stored, the R.A.S.C. has the responsibility for getting supplies to the men. Upon the regimental Q.M.S. invariably falls the duty of collecting the ration.

All local supplies, supplementing what is transported direct from foreign or overseas markets, are bought by the R.A.S.C., which enters into the open market, dealing with contractors, whether at home or abroad. The N.A.A.F.I. also assist at home, and at certain stations abroad, in purchasing perishable items such as vegetables, etc.

Practically everywhere abroad, a complete ration scale is in operation, but at home the men receive a small cash allowance sufficient to enable them to vary the prescribed dietary. A small credit may be carried forward from month to month, and at Christmas any credit accumulated in this fashion may be spent on extras.

Even so brief an account as this would be incomplete without some reference to the care that has been given to provision of trained cooks. There are over a hundred centres where the best civilian chefs give instruction and practical training, and more than 50,000 men have passed out fully qualified.

There are also expert catering advisers who regularly visit the various units and report every month to the War Office. Finally the men themselves are allowed a voice in the arrangements made for their well-being, a messing committee having been introduced to which they elect their own representatives.

Douglas Glen

THE BALCONY OF AN OFFICERS' MESS AT AN R.A.F. STATION—In the distance is the Mess Hut of the men: R.A.F. officers usually have excellent messes, where the food is good and plentiful. Mess bills can vary according to individual aerodromes, but bills are now being kept down in accordance with recent instructions from the Air Ministry

(4) FEEDING the R.A.F.

With Some Specialised Problems

THE task of feeding the Royal Air Force at home and abroad is colossal. It would be a big enough undertaking under normal conditions, with sea routes unhindered and imports freely flowing, to cater for a force that has expanded to such huge proportions and is spread over half the world, from the Hebrides to Singapore. But now one can picture to oneself the organisation that is needed to deal with the problem in wartime, when many sources of supply are closed altogether, or drastically curtailed, and ships that used to bring us food are requisitioned for the transport of war material and munitions.

In foreign stations the greatest possible use must be made of local produce to save transport. For instance, in tropical climates, where fruit is plentiful, as much of it as is possible is added to the men's rations, and wherever fresh meat and poultry are obtainable they are promptly requisitioned, deficiencies being made up by frozen meat from home or overseas. Climate, too, has to be taken into consideration in arranging ration scales, for obviously the kinds of food necessary to keep a man in the pink of condition in the heat of the Libyan Desert may be quite different from those of an airman operating from Iceland.

At home four meals are the order of the day, but abroad these have to be varied to suit all kinds of special requirements, and after a long night flight air crews are apt to come home to breakfast very hungry.

Of course, it is not always breakfast-time when the planes are landing, for far more flying is done in daylight than by night. But, whatever the hour, day or night, good food and a hot drink are always ready for the crews.

At some stations there will be a good supper, too. With ordinary rations, no alcoholic drinks are provided, but on special occasions an issue of rum is made, and there are plenty of facilities for drinks wherever it is practicable. Climate may rule out such common wants as beer, and unfortunately the garrison at Tobruk, for example, has to make shift without it.

All aircraft abroad are normally given flying rations sufficient for, perhaps, two or three days, the quantity being dependent on the discretion of the commander. Moreover, it has been found that during long hours of flying crews like something that they can "chew." A certain sum, varying from 1s. upwards, is allowed to each man so that he can take what suits his fancy. Usually they carry something that is compact as well as nutritious. Cake, apples, oranges, glucose, barley sugar, or boiled sweets and chocolate are first favourites.

Many people reading in the daily Press of hot, appetising meals being served to men whilst on flying duty have wondered how it could be done. Actually the bigger machines have cooking facilities on board, whilst others carry rations which have been specially prepared before the take-off. Hot meals from the grill are served in Sunderland flying-boats during long daylight reconnaissances, and Thermos flasks are in constant use for hot drinks during night flights. Catalina flying-boats also have their kitchens, hot coffee always on tap during the night, bacon and eggs sizzling on the plates for breakfast, and even juicy steaks cooked during the flight. Incidentally, the story of carrots as an exclusive diet for night pilots is, of course, grossly exaggerated; they fare much better than that. Everything, in fact, that is possible is done to ensure that the men in the air have good "nose-bags."

In addition to the basic rations provided, N.A.A.F.I. is always on hand with what they call the "frills." Where the R.A.F. goes, N.A.A.F.I. goes too. It is complementary to the cookhouse. What the men can't get at mess they can usually find when they visit N.A.A.F.I.

Of course, the aerodromes themselves have well-found kitchens, with trained staffs turning out meals of excellent quality daily. There are no restrictions as to any particular foods, such as sugar, but for bomber crews a special diet is arranged.

To ensure perfectly balanced rations the Air Ministry have appointed a bio-chemist and a specialist medical officer to watch over the food supply of the Royal Air Force. It is essential that the foods provided should have the greatest nutrition value possible. Foods are analysed to discover any deficiency in vitamins, fats, salts, minerals, proteins, carbohydrates; the health of the men is also very closely watched as well as the preparation of the food at various units, and plans for prevention of waste. There is an interesting side to R.A.F. food supply. That is their own food production scheme, whereby any surplus land that they are occupying is used to grow vegetables for their own consumption. It has been found that the men are very enthusiastic about this type of work, and actually more than 2,000 acres are now under cultivation for the benefit of the Air Force units.

Furthermore, salvage is not neglected, and messing by-products, such as bones, fats, swills, are sold whenever possible so as to eliminate all avoidable waste.

John Richmond

A UNIQUE CATERING PROBLEM—Preparing a meal thousands of feet up in the air during an actual operational flight: On the big flying-boats of the R.A.F., hot meals are actually prepared and served whilst in the air. Patrols lasting ten or twelve hours have made such arrangements necessary, and many of the bigger boats have fine galleys aboard—*Drawing by Roland Davies*

OFFICERS OF THE W.A.A.F. AS WEATHER FORECASTERS : An officer-to-be making observations of the wind with a theodolite

SOUTH AFRICANS IN THE WOMEN'S ARMY AUXILIARY SERVICE IN CAIRO : A picture taken during rest time in the mess room

PROSPECTIVE WEATHER FORECASTERS UNDERGOING A COURSE OF INSTRUCTION : Commissions in the W.A.A.F. are now being offered to women in the Meteorological Branch. Those accepted for this work are not required to pass through the ranks. The qualifications, however, are high and usually include a science degree in mathematics or physics. Training of a highly specialised character is given after acceptance, and the course is followed by practical instruction at a Meteorological Office attached to the Station. After posting, the officers will draw up forecasts from the weather reports recorded for them, and will give general meteorological advice and information. They must be able to give some indication of the probable force and direction of the wind at different altitudes ; the extent, height and nature of cloud ; ice conditions ; and the changes likely to occur during the ensuing few hours within a given area or along a stated route. Such a forecast requires sound judgment, based on scientific training. Upon its phrasing depends, in large part, whether or not the bombers fly to-night : over-optimism may cause disaster ; over-caution may give the enemy an unnecessary respite !

A CORNER OF ONE OF THE DORMITORIES OF THE W.A.A.S. IN CAIRO : In Egypt the Women's Army Auxiliary Service is made up of women who come from all parts of the Union of South Africa. They relieve men of various duties which can be performed just as well by women. The two pictures above were taken at their barracks in Cairo during off-duty time

GIRLS OF THE A.T.S. AT WORK WITH THE A.-A. GUN BATTERIES : On the left are seen two of the Ack-Ack girls at a gun site near London. When at work spotting for aircraft, they wear coloured spectacles to avoid injury to their eyes from the strong glare. The picture above comes from Northern Ireland : the "spotters" here find it easier to work in the special swivelling chairs provided for this particular job

WOMEN IN THE SERVICES

EXPRESSIONS AT A MOTOR-TRANSPORT DEMONSTRATION (*See also picture on right*)

The principal duties of the R.A.S.C. in an Anti-Aircraft Division are to deliver ammunition to the guns and deliver food to the troops. In addition, the R.A.S.C. are the "Carter Patersons" of the division and supply all transport requirements. They are experts in motor vehicles, and in addition to transport and maintenance work, also train drivers for other units of the Army. A number of A.T.S. girls are now being trained by this branch of the service for duties as drivers of staff cars and ambulances for the Army: they are taking their new duties very seriously

TRAINING A.T.S. GIRLS TO BECOME DRIVERS OF STAFF CARS AND AMBULANCES: Expert driving instruction being given with the aid of a large-scale model

THE A.T.S. IN CONVOY WORK: A pause for lunch by the roadside, when the girls are provided with tomatoes, salad and sandwiches: A large number of girls of the A.T.S. are now employed on convoy work. Formerly known as F.A.N.Y.S. (First-Aid Nursing Yeomanry Service) they ferry newly-manufactured vehicles from the R.A.S.C. depot, where they are delivered from the factory, in convoy to ports for shipment or to Army units. These girls must be tough and capable of a good deal of hard work. Their working hours are sometimes from 7.30 a.m. to 9 p.m. for two or three consecutive days and they are sometimes required to drive continuously for four hours or more without a rest. They are provided with cocoa or coffee and sandwiches for consumption en route

Above and on left—**REWARD FOR WORK WELL DONE: The pay parade in the Auxiliary Territorial Service is carried out on Army lines, each girl lining up to sign on the dotted line as she receives her weekly amount**

You may laugh at it to-day...

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THIS magnificently ornate pendant in "rich gilt colour brass" was the last word in G.E.C. lighting fittings for the smart drawing room of 1914. But designs change. Lighting methods improve. Science never stands still. The G.E.C., pioneers in everything electrical for the home, continued to progress during the last war. In this war, also, the G.E.C. is helping to fashion the "shape of things to come."

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that — owing to the difficulties of obtaining spare parts from America and the shortage of skilled labour — the Ronson Repair Service cannot accept any more repairs until after Christmas.

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PERSONAL—BY AIR

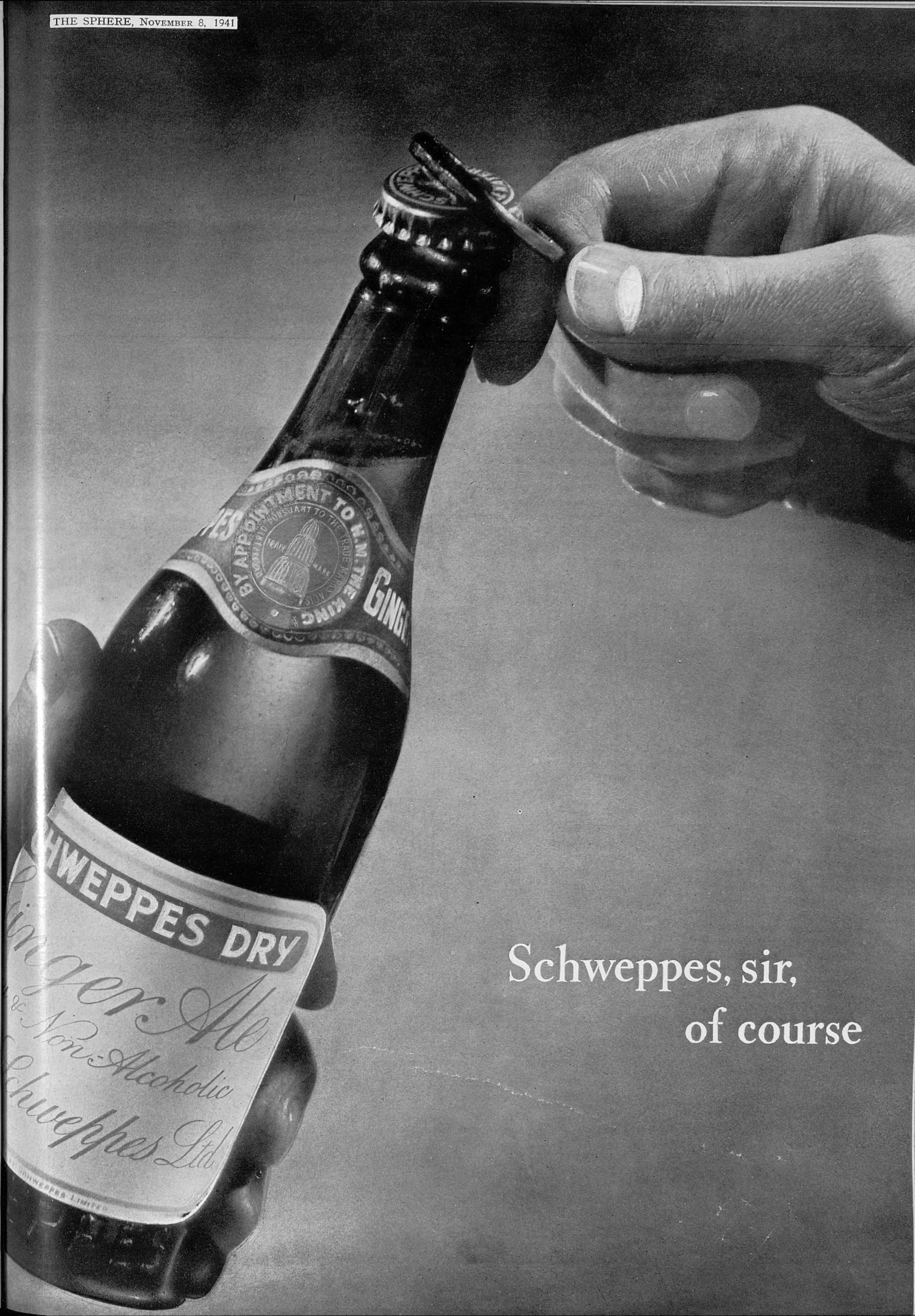
Dear Mr. Gerald:

I take up my pen in good time in order to send you Best Wishes on the occasion of your Birthday which should reach you five weeks from today. All at the Hall are well except old Mr. Macgregor who sustained a slight flesh wound near his asparagus beds by a bow and arrow discharged by a young evacuee. This evacuee is one of the ones stopping at the Lodge, and Mr. Macgregor had made him the bow and arrow himself, so he cannot complain. The silver is put away for the duration, but I take it out periodically and give it a careful clean. Last year we lifted a fine lot of potatoes from what used to be the Clock Golf Lawn. I am also looking after the cellar to the best of my ability. In particular, I have made a point of laying in a case of Rose's Lime Juice against your return. Like many good things, Rose's is hard to obtain in England these days. Still, there will be ample Rose's Lime Juice after the war, when all headaches and hangovers will be where they belong — on the other side of the Rhine.

In anticipation of that day, I sign myself, in haste.

Yours respectfully, Albert Hawkins
(Sergt., Home Guard).

There is no substitute for ROSE'S Lime Juice



Schweppes, sir,
of course

In olden times only the fittest survived. The same is true today: only the fittest can survive the strain and worry of war conditions while keeping their health and vitality.

Nerve *versus* Nerves —yesterday and today

Once life was calm and unhurried; now for most of us it means extra worries, long hours of unaccustomed work and extra strain. Small wonder that seven out of ten people today need 'Sanatogen' Nerve-Tonic Food. 'Sanatogen' nourishes the taut nerves, enriches the impoverished blood, by supplying them with essential organic phosphorus and protein. This doesn't mean a mere temporary stimulation to energy; it means positive, lasting benefit to nerves and body.

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The Registered Trade Mark 'SANATOGEN' applied to Nerve-Tonic Food, denotes a brand of casein and sodium glycerophosphate chemically combined by Genatosan Limited, the proprietors of the Trade Mark.

IN QUEST OF GOOD HOTELS

BY ASHLEY COURTENAY

Owing to rationing of paper and the demand on our editorial pages, it is necessary to omit from time to time Mr. Ashley Courtenay's usual weekly article. We would, however, emphasise that his services are always available for advising SPHERE *readers by post of hotels, both large and small, known to him personally. Letters, accompanied by a stamped, addressed envelope for reply, should be addressed to him c/o The Editor,* THE SPHERE, *Commonwealth House, 1, New Oxford Street, London, W.C.1. Personal and telephone inquiries, however, cannot be accepted.*

CHURCH STRETTON, Shropshire. THE HOTEL. Mostly full, but the occasional vacancy in such a peaceful and picturesque district is worth waiting for. There are few hotels where homeliness is such a primary characteristic. Under the direction of Mr. W. Dennis Copeland and family.

LEATHERHEAD. THE RED HOUSE. Always very popular amongst Business and Retired people because of its accessibility to Town and its comfort. Vacant rooms are few and far between, but they are worth waiting for. Tel.: 2271.

SPREYTON, Mid-Devon. FUIDGE MANOR. Perfect peace, perfect comfort and perfect relaxation in the very heart of the country. Hard court, squash court and cheery licensed club room. Inclusive terms from 5½ gns. A few rooms now unexpectedly available for the winter months. Tel.: Whiddon Down 205.

TORQUAY. HEADLAND HOTEL. Though full at the moment, it is an hotel to make a note of should you wish to enjoy quiet luxury midst peaceful surrounds. The Management will welcome your enquiries.

TWYFORD, Berks. GROVE HALL HOTEL. Is this what you are looking for? London 37 miles. Frequent and fast service Paddington. Station 2 minutes' walk. Private bathroom to every bedroom. Three-star Hotel and yet a Home. Situated in a peaceful park. Limited accommodation *now* available. From 5½ gns. Tel.: Twyford 106.

WASHFORD, Somerset. THE DRAGON HOUSE. Strategically placed for Minehead, the Quantocks and the sea at Blue Anchor. A homely hotel for autumn and winter residence. Country fare and country contentment. Tel.: Washford 215.

WASHINGTON, Nr. Worthing. CLEMATIS COTTAGE HOTEL. A haven of content and character for a week-end or longer in the fold of the Sussex Downs. Noted for the discerning people who repeatedly stay there. Easy access to the West Sussex Golf Club at Pulborough. Inclusive terms from 3½ gns.

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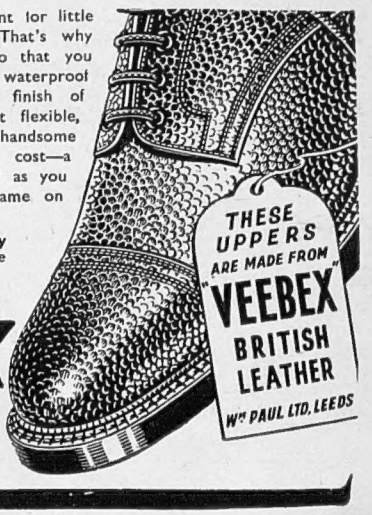

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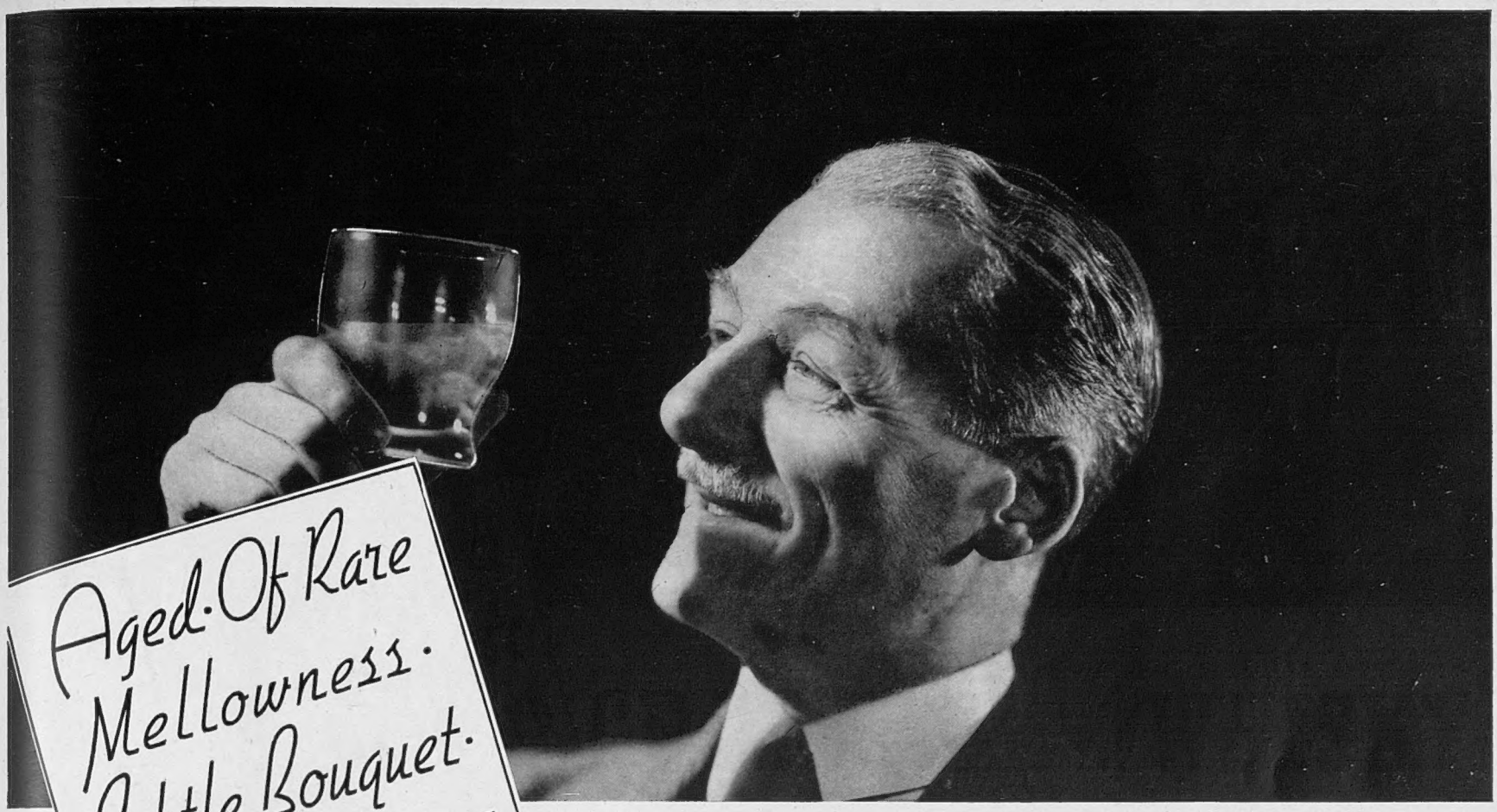

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Good King Wenceslas looked out
On the feast of Stephen
Where the rough lay round about,
Deep and most uneven.
Gloomy was the good king's plight–
Playing like a rabbit–
When a member came in sight:
Birdies were his habit.

"Hither, Pro., and stand by me,
If thou knowest it telling,
Yonder member, why is he
'Fore' so loudly yelling?"
"See, he hits a mighty ball;
Its name, Sire, is North British,
On the green you'll see it fall,
All folks to astonish."

"Bring my clubs, set up my tee,
Place the golf ball hither.
Bogey for this hole is three?
Watch my drive go thither."
Pro. and monarch forth they went,
Forth they went together,
But the ball, to their lament,
Nestled in the heather.

"Sire, the rough is cruel now,
And the wind blows stronger,
Play North British—that is how
Drives are straight and longer."
"I will try one, good my Pro.
Ah, that went more boldly!
When my card goes in, I know,
Folks won't view it coldly."

In the masters' steps he trod,
Playing down the fairway;
Shots went Pin-Hi from the sod–
Supercharged was their way.
Therefore, golfing men, be sure,
If you're not progressing,
Play North British and secure,
Drive and putts impressing.

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